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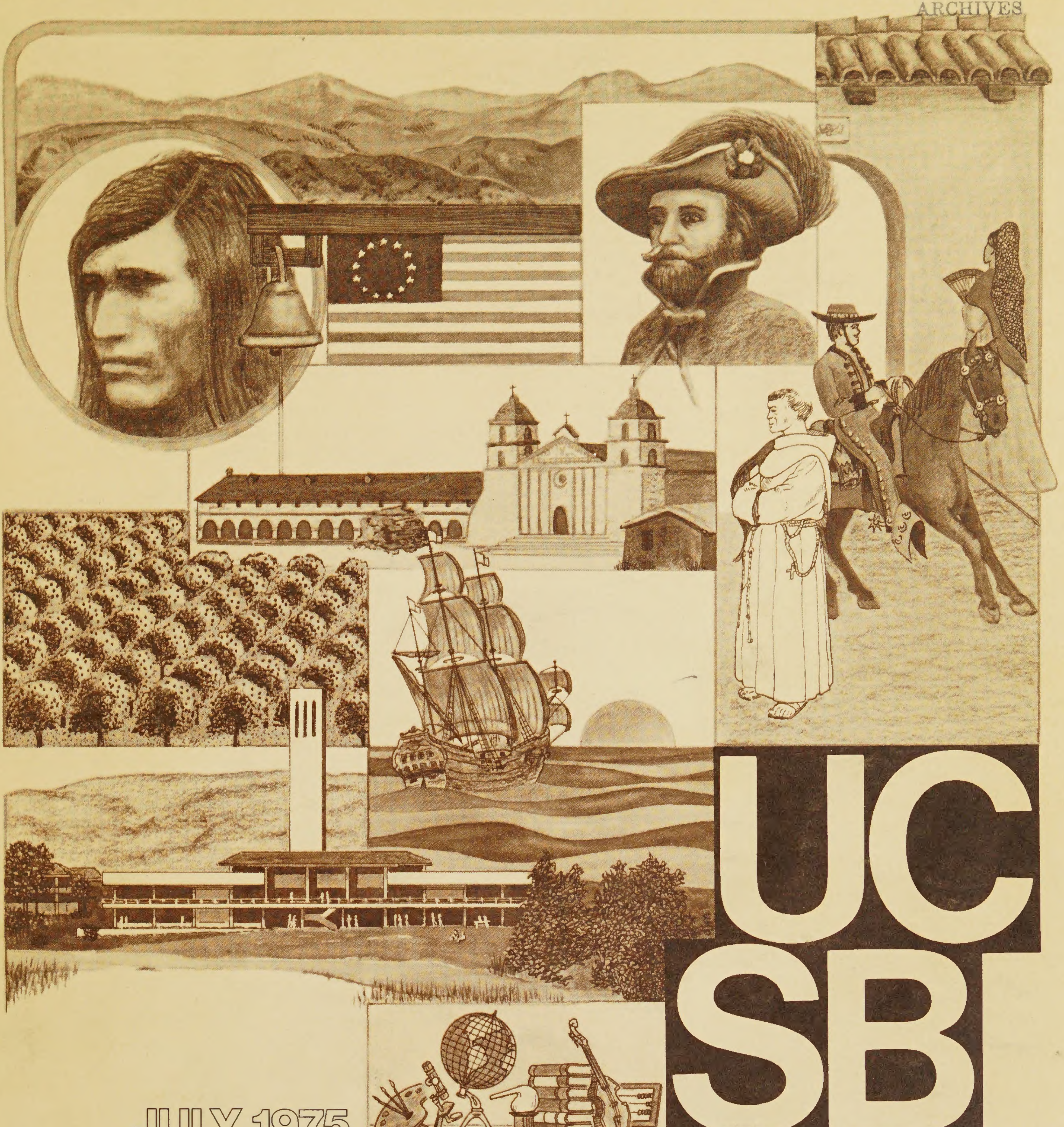

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UNIVERSITY OF CALIFORNIA, SANTA BARBARA

1975-76 General Catalog Issue

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University of California, Santa Barbara, California 93106

Office	Location	Phone (Area Code 805)
Admissions	Adm Bldg Rm. 1210	961-2881
Associated Students	University Center	961-2566
Counseling Center	Bldg. 478	961-2781
Creative Studies, College of	Bldg. 494 Rm. 101	961-2364
Education, Graduate School of	Phelps Hall Rm. 1190	961-2341
Education Abroad	South Hall Rm. 1205	961-2755
Engineering, College of	Engineering Bldg. Rm. 1010	961-3207
Extended University	Adm. Bldg. Rm. 1345	961-3940
Extension	Ellison Hall Rm. 1832	961-3231
Financial Aids	Bldg. 434	961-2431
Foreign Students	Bldg. 434	961-2929
Graduate Division	Adm. Bldg. Rm. 3117	961-2277
Graduate Students Association	South Hall Rm. 1409	961-3824
Housing	Adm. Bldg. Rm. 1234	961-2282
Information Center	South Hall Rm. 1417	961-2091
Letters & Science, College of	Adm. Bldg. Rm. 2217	961-2038
Ombudsman	South Hall Rm. 3503	961-3285
Placement Center	Bldg. 427	961-3081
Public Information	Adm. Bldg. Rm. 1008	961-2191
Registrar	Adm. Bldg. Rm. 1117	961-3592
Relations with Schools and and Colleges	South Hall Rm. 3631	961-2485
Student Affairs	South Hall Rm. 3607	961-2091
Student Health	Bldg. 588	961-3371
Student Special Services	Bldg. 434 Rm. 122	961-3883
Summer Sessions	Ellison Hall Rm. 5707	961-2047
University Branch Post Office	University Center	—
University Center	Opposite Storke Tower	961-2334

UCSB
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
Published at Santa Barbara, California 93106
Volume 15, Number 8, July 1975

A series of administrative publications of the University of California, Santa Barbara. Second-class postage paid at Santa Barbara, California. Published 8 times per year: 1 in January, 1 in March, 2 in May, 2 in June, 2 in July.

All announcements herein are subject to revision.

Price: $1.50
by mail: $2.00

UCSB

University of California, Santa Barbara

1975-76 General Catalog Issue

Fall, Winter, Spring Quarters

About the Cover

America's Bicentennial Celebration is portrayed in the cover montage with reflections of historical events which took place in California during the same period. The native American Indian, upper left, depicts the long history of the Chumash Indian in the Santa Barbara area. We see the 13-star American flag, adopted shortly after Juan Bastista de Anza (next picture) led the first Spanish settlers to California in 1776 on his famous trek from Mexico to San Francisco. His band of families, missionaries and soldiers encamped in Santa Barbara in February of that year. The mission padres — Father Serra the most famous — established the chain of California missions in the 18th century, with Santa Barbara's mission dedicated in 1786 — three years after the end of the Revolutionary War. The Spanish horseman symbolizes the founding of the Presidio at Santa Barbara in 1782 — the same year the Provisional Peace Treaty was signed with Britain — and the period of the 19th century Mexican land grants, when extensive ranchos were settled throughout the area. Sailing ships brought explorers to California and when one ran aground in 1819 on a sandspit next to the present UCSB campus, the area became known as La Goleta (the schooner). The orchard represents the thousands of acres of lemons and avocados now on the rich agricultural coastal shelf. And finally, a view of the present, with large university buildings on the Pacific and the tower of the Storke Publications Building, which — 175 feet in height — is man's most immutable landmark to date on these shores.

CALENDAR, 1975-76

	Fall '75	Winter '76	Spring '76
Opening dates for filing applications for admission to undergraduate status to be filed with the Admissions Office.	Nov. 1, 1974 Friday	July 1, 1975 Tuesday	Oct. 1, 1975 Wednesday
Opening dates for intercampus transfer.		July 1, 1975 Tuesday	Oct. 1, 1975
Final date for applications and credentials for admission to graduate status to be filed with the Dean of the Graduate Division.	Aug. 1, 1975 Friday	Nov. 3, 1975 Monday	Feb. 2, 1976 Monday
Last day to make application for readmission to be filed with the Registrar's Office by students who have been absent or who withdrew within the last quarter in attendance.	Aug. 29, Friday	Dec. 2, Tuesday	Feb. 27, Friday
Last day to pay fees to hold space in classes reserved through pre-enrollment. Fees must be in the Cashier's Office before 4:00 p.m.	Sept. 5, Friday	Dec. 10, Wednesday	Mar. 10, Wednesday
Quarter begins.	Sept. 22, Monday	Jan. 5, Monday	April 1, Thursday
Registration, Counseling, and Testing.	Sept. 22, Mon thru Sept. 26, Friday	Jan. 5, Mon. thru Jan. 6, Tuesday	Apr. 1, Thur. thru Apr. 1, Friday
Classes begin.	Sept. 29, Monday	Jan. 7, Wednesday	April 5, Monday
Last day to register.	Oct. 10, Friday	Jan. 20, Tuesday	April 16, Friday
Dead week. Faculty are requested to avoid scheduling mid-terms and final examinations in this period. No student or faculty sponsored evening student group meeting or social events are scheduled for this week.	Dec. 1, Mon. to Dec. 7, Sun.	Mar. 9, Tues. to Mar. 17, Wed.	June 7, Mon. to June 13, Sun.
Classes end.	Dec. 5, Friday	Mar. 16, Tuesday	June 11, Friday
Final Exams.	Dec. 8, Mon. thru Dec. 13, Saturday	Mar. 18, Thur. thru Mar. 24, Wednesday	June 14, Mon. thru June 19, Saturday
Quarter ends.	Dec. 13, Saturday	Mar. 24, Wednesday	June 19, Saturday
Commencement.			June 20, 1976 Sunday, p.m.

Administrative Holidays

Labor Day • Monday, September 1, 1975

Thanksgiving • Thursday and Friday, November 27, 28, 1975

Christmas • Thursday and Friday, December 25, 26, 1975

New Year • Thursday and Friday, January 1, 2, 1976

President's Day • Monday, February 16, 1976

Spring Holiday • Monday, March 29, 1976

Memorial Day • Monday, May 31, 1976

Summer 1976

Pre-enrollment for Summer Session	April 1, 1976
Last day for applications to the Summer Program for High School Juniors	May 1, 1976
Summer Session High School Junior Program Begins	June 21, 1976
Instruction begins for Summer Session	June 21, 1976
Instruction ends for Summer Session	July 30, 1976

Invitation to Learning

"Whatever else they may do, universities concern themselves with knowledge and the implications of knowledge. However, no guarantees of wisdom accrue from simple exposure to study. We must go deeper—and this is the responsibility, in part, of higher education—to reach through the mind into the spirit to awaken and keep awake all our finer sensibilities as human beings.

As critical as universities' achievements in science and technology are to the quality of national life, we cannot ignore one very important purpose of higher education: the nurturing of those human qualities which bring satisfaction and constructive accomplishment in the uses of our time, in our family and community life, and in our relations with other people."

Vernon I. Cheadle
Chancellor

Foreword

One of a series of administrative periodicals, this catalog is intended to serve as a primary source of information for persons seeking guidance regarding the academic offerings of this campus. This edition has been completely rewritten and redesigned. Its new format is intended to make it more readily usable by providing expanded cross references and additional references to secondary sources.

The chapters in the front section have been lettered; sections within the chapters are numbered. (Ⓕ5 refers to chapter Ⓕ, section 5.) Chapter and section indicators are located at the top of each page. Cross references are located in the outside margins.

A complete index and a glossary of unfamiliar terms are located at the end of this catalog. The address and location of administrative offices may be found on the inside front cover. The address and location of academic offices may be found in the various departmental descriptions.

More than a year of research and writing have gone into this revised edition, including an immense amount of input from students, faculty and administrators. The Revision Committee wishes to express its sincere gratitude to the many persons who had a part in this effort, and without whom it could not have been completed.

Suggestions which will improve future editions may be addressed to the UCSB Publications Office.

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A Introduction to UCSB

A1 The Santa Barbara campus

The University of California at Santa Barbara is among the nation's leading medium-sized institutions of higher learning. Located on the Pacific seashore west of Santa Barbara, this rapidly developing academic community brings together some 13,000 students and a faculty of more than 800 in a wide diversity of studies. New programs and study areas are constantly being added to the range of academic offerings. As a research-oriented campus, it provides extensive laboratory facilities, an excellent library, and eleven organized research units, while also making available a wide variety of resources for effective teaching. High standards of scholarship, attention to the individual student, a tradition of relaxed informality, the mild climate, and a setting of singular natural beauty combine to make this a stimulating, appealing center of research and learning.

A2 History of the campus

UCSB traces its origins to the Ida Blake School, founded in 1891 to offer training in home economics and industrial arts. Taken over by the state in 1909, it became known as the Santa Barbara State Normal School. When a program in liberal arts was authorized in 1921, the school was renamed Santa Barbara State College, and in 1944 was made the seventh campus of the University of California. The present location, on the site of a former Marine air base, was acquired in 1954 when the school was moved from the Santa Barbara Riviera.

The University of California was founded in Oakland in 1868 and moved to Berkeley in 1873. It has since become one of the world's great institutions of higher learning and research. The University system includes nine campuses from Davis to San Diego, six major research units, and nine agricultural field stations. In addition, a part-time degree program is being developed with off-campus learning centers, and an Extension program is serviced by 53 offices located throughout the state.[1]

A3 Colleges, divisions and schools

College of Letters and Science

(See program list in A4

This liberal arts college was established in 1961 and now has an enrollment of more than 10,000 undergraduates. Nearly 80 major programs are available, encompassing traditional fields of study and many interdisciplinary and innovative academic programs. Three degrees are awarded by the college — Bachelor of Arts, Bachelor of Science, and Bachelor of Music. The General Education Program, the nucleus of undergraduate study, permits the development of a program of courses appropriate to the individual student.[2]

---

[1] More information about the UC system is contained in the *University of California Undergraduate Admissions Circular*, which may be obtained from the Admissions Office. See inside front cover for address.

[2] Ⓖ contains additional information about the College of Letters and Science.

College of Engineering

Established as the School of Engineering in 1961, it was renamed a college in 1966. More than 400 undergraduates and 250 graduates are enrolled in three departments. The Engineering programs provide cultural sophistication in addition to strong scientific and analytical training, enabling graduates to respond to the needs of society. Undergraduate and advanced degrees are offered by the Departments of Chemical and Nuclear Engineering, Electrical Engineering and Computer Science, and Mechanical and Environmental Engineering.[3]

[3] Ⓗ contains additional information about the College of Engineering.

College of Creative Studies

This college, which enrolls undergraduate students of recognized talent for independent work in the arts, literature, mathematics, or the sciences, was established in 1967. The college is unique in the UC system. Seven majors are offered: Art (Painting and Sculpture), Biology, Chemistry, Literature, Mathematics, Music Theory and Composition, and Physics. Work in the college leads to the Bachelor of Arts degree.[4]

[4] Ⓘ contains additional information about the College of Creative Studies.

Graduate Division

The Graduate Division was established in 1961. Through its Graduate Division, UCSB offers advanced programs of study leading to the Master of Arts and Doctor of Philosophy degrees in most fields.[5] Other degrees awarded through the Graduate Division are the Master of Fine Arts in Studio Subjects, the Master of Science, the Candidate in Philosophy, and the Master of Education. The Translator-Interpreter Certificate is also available in several languages.[6]

[5] See chart in A4

[6] Ⓙ contains additional information about the Graduate Division.

Graduate School of Education

UCSB and its antecedents, for many years known as the Santa Barbara State Normal School, have been associated with the preparation of elementary and secondary school teachers since 1917. The Graduate School of Education offers credential programs for the preparation of teachers and educational specialists, as well as advanced degree programs leading to the Master's degree in eight areas of concentration, and the doctorate in six areas.[7]

[7] See Ⓚ for additional information about the Graduate School of Education.

A4 Campus and community

The campus setting

The UCSB campus is situated on an 804 acre promontory on the Pacific seashore. It is bordered on two sides by the ocean and on the third by the community of Isla Vista. On the fourth side, the campus faces the Santa Ynez mountain range across the Goleta Valley. The Main Campus contains most of the 40 permanent buildings which house the University. The outlying Storke Campus includes playing fields and a married-student housing complex. The West Campus, which is largely undeveloped, contains an ecologically significant expanse of dunes which has been set aside as a natural preserve.[8] Near the campus is the Santa Barbara Municipal Airport, where

[8] A map of the campus appears in the back of this catalog.

several airlines provide service to and from Los Angeles, San Francisco and other major cities. The four-lane Highway 101 passes less than a mile from UCSB, with clearly marked turn-offs leading to the campus. Santa Barbara may also be reached by Amtrak and by regular bus lines which stop downtown and in nearby Goleta.

On-campus and between the campus and nearby residential areas, the principal means of transportation is the bicycle. A four-mile system of bike paths and three bicycle underpasses separate cyclists from pedestrians and motorists. Mini-buses operate between the campus, Isla Vista and Goleta and are free to undergraduate students paying Associated Student fees.[9]

Recreational facilities include tennis courts, more than a mile of swimming and surfing beach, an Olympic-sized swimming pool, extensive playing fields, a synthetic-surface track, a baseball diamond, two gyms, a 14,000-seat stadium, an archery range and a small golf course.[10] The Santa Barbara climate is ideal for outdoor activities year-round.

The community

UCSB is located in the Goleta Valley about 10 miles from downtown Santa Barbara. The greater metropolitan area has a population of about 125,000.

Adjacent to the University is the community of Isla Vista. I.V., as it is called, includes some 10,000 residents, most of whom are young and 55% of whom are UCSB students. It is bounded on three sides by the university and on the fourth by the ocean. Less than a square mile in area, it has provisions for a variety of student services and needs.

The city of Santa Barbara offers a diversity of natural and cultural attractions. Notable among these are the Museum of Art, the Museum of Natural History and the Botanic Garden. Class sessions are sometimes held at the Museum of Natural History, and programs are frequently arranged at the Museum of Art. The Botanic Garden is available to classes and advanced students in botany, and a research laboratory has been established there for independent investigation by students and faculty.

The relationship between UCSB and its neighbors has been one of cooperation. While members of the academic community take advantage of the many programs and facilities available to them in greater Santa Barbara,[11] the University also offers much that is appealing to residents of the area. Among such offerings are the Extended University and University Extension courses, the Art Galleries' exhibits, and the many programs, lectures and concerts presented throughout the year by the Committee on Arts and Lectures.[12]

A5 Additional academic programs

Summer Sessions

A six week Summer Session is offered each year following the close of the Spring Quarter. The Summer Sessions program includes regular lower and upper division courses, special study undergraduate courses, selected graduate courses, and standard teaching credential courses.[13]

Qualified high school students who have completed their junior year may enroll in a special college-level Summer Session program for which they receive full University credit.[14]

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[9] See Ⓒ for information about fees.

[10] See D8 for more information about recreation.

[11] For example, Hillside House, a privately endowed home and school for cerebral palsied children, serves as an observation laboratory for students in psychology and speech. Other schools, both in Santa Barbara and surrounding counties, meet similar needs for those interested in the problems of the handicapped.

[12] More information about these offerings is located in A5

[13] The *Summer Sessions Bulletin* is published each March and contains a list of summer session courses. It may be obtained upon request from the Summer Sessions Office. See inside front cover for address.

University Extension

University Extension makes the educational resources of the University available to individuals and organizations throughout Kern, San Luis Obispo, Ventura and Santa Barbara counties. Extension programs include educational opportunities for adults in professional, administrative and managerial fields. Other programs enable interested persons to pursue their own intellectual and cultural objectives. Educational and consulting services are provided to governmental and voluntary agencies regarding such problems as population growth, urbanization, and the impact of technology on the environment.

A program of summer courses and workshops is offered regularly. Veterans may use educational benefits available to them to enroll in the UC Extension classes if the classes are part of the objectives approved by the Veterans Administration.[15]

Education Abroad Program

The University of California offers an outstanding overseas study program, in cooperation with schools in 17 countries. More than 600 graduate and undergraduate students take part in this program each year. Participating students remain registered on their home campuses while studying abroad, and receive full academic credit for their work. Approximately 150 foreign students, with scholarships provided through the University of California and their home institution, attend the University under the sponsorship of the EAP. The administrative offices of the University-wide EAP are located on the UCSB campus. Students are invited to apply at Room 1131 South Hall.[16]

Arts and Lectures

The University Committee on Arts and Lectures pursues a twofold mission, serving the cultural life of the campus community and extending and supplementing the intellectual life of the classroom. Through the committee, the University brings outstanding productions, lecturers and performing artists to campus each year. These events, which are open to the public, include films, art exhibitions, dance events, concerts, plays and lectures.

During each academic year, the University sponsors a concert series of world-renowned artists. Touring drama and dance companies of distinction are invited to perform on campus, and a series of from 50 to 60 lectures, covering a wide variety of topics of general interest, is presented annually. Distinguished persons visit the campus for varying lengths of time as Regents' Professors and Lecturers.

A weekly film series is programmed each quarter. Films are selected with broad ranges of style and subject matter. The Departments of Music and Drama provide an excellent selection of musical, dramatic and dance productions during the year, ranging from the improvisational to the classical.

Extended University

The Extended University was founded in 1972 to explore and develop means by which University degree programs could be made available to part-time students. A limited number of graduate and

[14] Application forms for the High School Program are available from the Summer Sessions office.

[15] For information and catalogs, contact UC Extension. See inside front cover for address.

[16] For more detailed information about EAP, refer to Ⓛ

undergraduate programs are now available to students who cannot enroll on a full-time basis because of employment, family or other responsibilities. Students enrolled in degree programs through the Extended University are regularly admitted and enrolled students of the University of California. They are taught by the regular University faculty and must meet the traditional standards of excellence required by the University. Times and locations[17] of classes have been modified to meet the needs of part-time students, and costs have been lowered so as to make part-time education financially realistic for many. Extended University offerings through UCSB include Bachelor's degree programs in Law and Society, Liberal Studies, and Computer Science; and Master's degree programs in Economics (with an Urban Economics emphasis), and in Electrical Engineering/Computer Science.[18] Since new programs are made available each year, students interested in other options should contact the Extended University office.

View of campus looking toward the Channel Islands.

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[17] A Learning Center is maintained by the Extended University in Ventura, California.

[18] See also the *Graduate Division Announcement* for more information about available graduate programs. See inside front cover for the address of the Graduate Division and the Extended University.

Degrees and Majors offered at UCSB by Academic Unit

Ⓖ College of Letters and Science, L&S
Ⓗ College of Engineering, Engr
Ⓘ College of Creative Studies, CrSts
Ⓙ Graduate Division, Grad

Major	BA	BS	MA	MS	PhD[1]	Other
African Area Studies [2]	L&S					
Anthropology, Cultural	L&S					
Physical	L&S					
Anthropology	L&S		Grad		Grad	
Aquatic Biology	L&S					
Art, History	L&S		Grad		Grad	
Studio	L&S					**MFA** (Grad)
Art, Painting	CrSts					
Sculpture	CrSts					
Asian Studies[2]	L&S		Grad			
Biochemistry - Molecular Biology	L&S		Grad		Grad	
Biological Sciences	L&S					
Biology	CrSts		Grad		Grad	
Black Studies	L&S					
Botany	L&S		Grad			
Cellular and Organismal Biology	L&S					
Chemical Engineering		Engr		Grad	Grad	
Chemistry	L&S, CrSts	L&S	Grad		Grad	
Chinese	L&S					
Classical Archaeology[2]	L&S					
Classical Civilization[2]	L&S					
Classics	L&S		Grad			
Combination Social Sciences[2]	L&S					
Communication Studies	L&S					
Comparative Literature[2]	L&S		Grad		Grad	
Computer Science[2]	L&S	L&S				
Dance	L&S					
Developmental Psychology	L&S					
Dramatic Art	L&S		Grad		Grad	
Economics, General	L&S		Grad		Grad	
Business	L&S					
Economics/Mathematics[2]	L&S					
Education			Grad		Grad	**MEd** and **Credential** programs (Grad)
Electrical Engineering		Engr		Grad	Grad	
English	L&S		Grad		Grad	
Environmental Biology	L&S					
Environmental Studies[2]	L&S					
Experimental Psychology	L&S					
Film Studies[2]	L&S					
French	L&S		Grad		Grad	Translator - Interpreter Certificate (Grad)
Geography	L&S					
Geology	L&S		Grad		Grad	
Germanic Languages and Literature	L&S		Grad		Grad	Translator - Interpreter Certificate (Grad)

[1] Candidate in Philosophy degree, C.Phil. (GD) may be granted by any department authorized to grant the PhD, if the department elects to do so.

[2] Interdepartmental Major Ⓖ.

Greek	L&S					
Health Studies	L&S					
Hispanic Civilization[2]	L&S		Grad			
History	L&S		Grad		Grad	
Human Factors	L&S					
Individual[2]	L&S	Engr	Grad		Grad	
Italian	L&S					
Latin	L&S					
Law and Society[2]	L&S					
Linguistics	L&S					
Mathematics	L&S, CrSts		Grad		Grad	
Mathematics, Applied	L&S		Grad			
Mechanical Engineering		Engr		Grad	Grad	
Medieval Studies[2]	L&S					
Middle Eastern Studies[2]	L&S					
Music	L&S		Grad		Grad	
Music Theory and Composition	CrSts					
Music, Bachelor of						BM
Musical Performance			Grad			
Nuclear Engineering		Engr		Grad		
Pharmacology	L&S					
Philosophy	L&S		Grad		Grad	
Physical Education	L&S		Grad			
Physics	L&S	L&S	Grad		Grad	
Physiological Psychology		L&S				
Political Science	L&S		Grad		Grad	
Political Science (Public Service)	L&S					
Portuguese	L&S					
Psychology	L&S		Grad		Grad	
Public and Social Affairs			Grad			
Religious Studies	L&S		Grad		Grad	
Renaissance Studies[2]	L&S					
Russian Area Studies[2] (Second major in approved area required)	L&S					
Scientific Instrumentation				Grad		
Slavic Languages and Literature	L&S					
Sociology	L&S		Grad		Grad	
Spanish	L&S		Grad		Grad	
Speech			Grad			
Speech and Hearing	L&S					
Speech and Hearing Sciences			Grad		Grad	
Tutorial[2]	L&S					
Zoology	L&S		Grad			

Pre-professional Fields. Students at UCSB often plan to enter a professional school after graduation. While fulfilling their Bachelor's degree requirements at UCSB, they may complete all or most of the prerequisites for admission to a variety of professional programs such as the following:

Architecture
Business/Management
Dentistry
Education
Forestry
Journalism/Mass Communication
Law
Library Science
Medical Technology
Medicine
Veterinary Medicine
Nursing
Physical Therapy
Social Work
Special Education
Speech Therapy

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[2] Interdepartmental major Ⓖ.

Academic facilities

The University Library

The UCSB Library, the largest on the west coast between Los Angeles and the Bay area, is a member of the Association for Research Libraries and of the Center for Research Libraries. It serves the University community with 1,100,000 volumes, a 20,000 disc record collection, which includes an 11,000 disc archival collection, and subscriptions to 17,500 periodicals and 114 newspapers. Another half million volumes are available in micro form. In addition to the general book collection in open stacks, several specialized collections are maintained for scholarly research.

Among these are the Sciences-Engineering Library, the oil spill archives, the technical report collection, the Government Publications section, the curriculum collection, the Arts Library, the Chicano studies unit, the Black studies collection, the oriental collection, and the Department of Special Collections.[19]

The Computer Center

The Computer Center offers a wide range of computer resources to faculty and students, including minicomputers at several locations on campus and a DEC PDP 11/45, which is used to provide interactive BASIC services. These smaller computers are linked to the main Computer, the IBM System 360 Model 75. The Model 75 is linked to a national computer network. These on-campus computer facilities, in combination with those available through the network, provide significant support for instruction and research.[20]

The Art Galleries

The UCSB Art Galleries, which are accredited by the American Association of Museums, provide a program of changing exhibitions in painting, sculpture, architecture, and other art forms. Some exhibitions are by faculty or student artists, while others are traveling exhibits from galleries and collections around the world.

The Galleries' permanent collections include the Sigmund Morgenroth Collection of renaissance and baroque medals and plaquettes; the Sedgwick Collection of 15th, 16th and 17th century paintings; the Ala Story Graphic Arts Collection; and the Helm and Goodspeed Collections of pre-Columbian art. The Art Galleries also house the Southern California Architectural Archives, which include drawings by Irving Gill, R. M. Schindler, J. R. Davidson, John Byers, Edna Muir, George Washington Smith, Carleton Winslow and others.

Conference facilities

UCSB offers conference facilities for organizations whose requests reflect a clear and definable educational objective. The University Conference Department provides complete conference services.[21]

Accreditation

The University of California at Santa Barbara holds accreditation from the Western Association of Schools and Colleges, the State Department of Education, the American Chemical Society, the Engineers' Council for Professional Development, and the Educational Training Board of the American Speech and Hearing Association.

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[19] The Library publishes several booklets which provide detailed information about its facilities and services. These are available from the Library upon request.

[20] Information regarding the use and capabilities of the Center may be obtained by contacting the Computer Center. See back cover for address.

[21] Further information may be obtained by contacting the Conference Coordinator, Department of Residence Halls. See back cover for address.

Organized Research Units

Eleven special research groups at UCSB operate outside established academic teaching departments. These Organized Research Units (ORU) are made up of faculty members and graduate students engaged in the investigation of a particular subject of mutual interest from a number of viewpoints and disciplines. The ORU's provide research facilities and invaluable experience for students and faculty in basic and applied research.[22]

Bureau of Educational Research and Development

Bureau of Educational Research and Development. John W. Cotton, Director. The primary focus of the Bureau is on the solution of significant educational problems through multi-disciplinary inquiry. Recent projects of the Bureau have centered on (1) an analysis of educational programs for the seriously emotionally disturbed student in California and (2) the development of a training program for classroom teachers who supervise teacher interns.

Center for Chicano Studies

The Center for Chicano Studies conducts interdisciplinary research in the history and culture of the Chicano people, contributes to the development of curricular and teaching methods and plans and organizes comprehensive programs of community and University service to the Chicano people in the Tri-Counties area. The Center administers a research project on Chicano political communication, a summer Institute in Chicano Studies for teachers, counselors and administrators, a Community Organizations and Leadership Conference, a Chicano manpower project and a Bilingual Instruction and Training Institute.

Channel Islands Field Station

The Channel Islands Field Station, Adrian Wenner, Director, with accommodations for twenty persons, is maintained on Santa Cruz Island. The unique, isolated, island environment has proven ideal for student and faculty research in anthropology, biology, geology and geography. Inquiries regarding use of the facilities or transportation to and from the Island should be addressed to the Director, Channel Islands Field Station, Marine Science Institute, University of California, Santa Barbara, California 93106.

Community and Organization Research Institute

The Community and Organization Research Institute, Harold L. Votey, Jr., Director, promotes and coordinates research into community problems and the public institutions established to deal with them. Emphasis is on a multi-disciplinary or problem oriented approach involving areas of interest to faculty and students from the social, biological, and physical sciences, and the professional schools. It also seeks to make scientific techniques and data available to interested persons in the surrounding community.

Computer Systems Laboratory

The Computer Systems Laboratory, John G. Skalnik, Acting Director, Fall 1975, Roy Leipnik, Director, Winter, Spring 1976, is the focal-point for research in new computer techniques and the application of computer resources to research in other disciplines. The Laboratory serves to stimulate the use of computers in other fields and provides support through direct assistance or through collaborative projects. Those interested in such projects are encouraged to contact the Laboratory.

Institute for Applied Behavioral Sciences

The Institute for Applied Behavioral Sciences, Manuel Carlos, Acting Director, seeks to increase the extent and effectiveness of the interaction between behavioral and social scientists and real world problems by a gradual extension of the University's behavioral research programs into the vast laboratories and problem areas available in the community. The Institute includes members of the departments of speech, psychology, education, sociology and Chicano studies. A research classroom for autistic children has been sponsored by the Institute and the Santa Barbara County school system.

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[22] Anyone wishing further information about any of the ORU's should write to the director of the unit. See back cover for address.

Institute of Environmental Stress

The Institute of Environmental Stress, Steven M. Horvath, Director, is interdepartmental, including representatives from anthropology, biological sciences, health services, nutrition, physical education, electrical engineering, mechanical engineering and psychology. Its primary purpose is to further fundamental research in the understanding of the adaptive potentials of organisms and to provide broad coverage of the borderline fields that relate human function to the complex and changing environments to which man and other organisms are continuously exposed. Research includes not only external environmental stresses but also the aging process, exercise, cardio-respiratory diseases, biomedical engineering and neurophysiology.

Institute for Interdisciplinary Applications of Algebra and Combinatorics

The Institute for Interdisciplinary Applications of Algebra and Combinatorics, Marvin Marcus, Director, is devoted to research in the fields of applied algebra and combinatorics and its intersections with other disciplines, such as biological sciences, economics, psychology and sociology. The Institute sponsors colloquium lectures by distinguished visiting specialists, research conferences and seminars. The editorial offices of the international research journal *Linear and Multilinear Algebra* are housed in the Institute offices. Several members of the Institute are currently involved in designing and assembling a Linear Algebra Bibliography covering advances in the field over approximately the last forty years.

Institute of Religious Studies

The Institute of Religious Studies, Walter H. Capps, Director, exists to foster cooperation between the various fields now engaged in studying man's religious experience, behavior and thought. By bringing together the varied viewpoints and contributions of those engaged in the scholarly and scientific study of religion, the Institute seeks to enlarge the scope and depth of human knowledge in this significant area of human experience. The Institute is the only public research agency in the country in the area of religion.

Marine Science Institute

The Marine Science Institute is an interdepartmental organization which seeks to promote and facilitate research in marine science. The research interests of the Institute are focused largely on the local coastal area: the characteristics, resources and uses, both present and anticipated, of the near-shore marine environment and the effects of the use and development of the marine environment upon the coastal zone communities. Participants in the Institute include representatives from such departments as anthropology, biological sciences, economics, electrical engineering, geography, geology and political science.

Quantum Institute

The Quantum Institute, Herbert P. Broida, Director, is a problem oriented, multidisciplinary research unit, designed to respond to problems important to governmental agencies, private industry, and research foundations. Research activities in applied mathematics, biology, chemistry, engineering, geography, geology, physics, and physiology range from large scale theoretical computations to experimental measurements and development of new instruments, devices and materials. The central theme of research, the interaction of electromagnetic radiation with matter, has been especially successful in the development of innovative techniques in applications of spectroscopy. The Quantum Institute encourages the participation of Visiting Scholars from the national and international scientific community.

Other Centers

Center for Black Studies

The Center for Black Studies administers a Faculty Development Program and performs community service functions. Newly inaugurated in 1975-76, the Faculty Development Program provides two Research Fellow positions to persons who have their doctoral dissertation to complete or to those who have just completed it. The fellowships offer a post-doctoral period for further development in research capacity and, where possible, half-time teaching assignments in academic departments. In addition, two half-time Research Assistant positions will be allocated for graduate students.

Women's Center

The Women's Center seeks to articulate and advance the place of women both on campus and in the community through a program of discussion, speakers, information, services and events which focus on topics relevant to the female experience. The Center, located in Building 513, contains offices, meeting rooms and a lounge.

Graduate student prepares dissertation on "Images of Women" under direction of history professor.

Storke Tower, a campus landmark, houses a 61-bell carillon, the only five-octave, chromatic bell system in existence.

Ⓑ Admission to the University

Undergraduate admission

The University's undergraduate admissions requirements are based on two principles: 1.) The best predictor of success in the University is high scholarship in previous academic work. **2.)** The study of certain subjects in high school gives a student good preparation for University work and reasonable freedom in choosing a special area of study.

Applying for admission

Application packets for undergraduate admission are available from high school and community college counselors or from any University of California Admissions Office. Completed applications and related materials should be sent to: **Office of Admissions, Administration 1124, University of California, Santa Barbara, CA. 93106.**

The opening dates, as well as admission requirements, are the same for all UC campuses. Each campus will accept for consideration all applications filed during the first month of the filing periods. After the first month, specific departments and/or campuses will close to new applicants as their enrollment quotas are met. Early applicants will be more likely to be admitted to the campus of their first choice. Once quotas have been filled, however, additional applications cannot be accepted and will be forwarded instead to the students' second or third choice UC campus where enrollment is still open.

Opening dates for application periods

Quarter to be admitted	**Opening application date**
Fall Quarter, 1975	November 1, 1974
Winter Quarter, 1976	July 1, 1975
Spring Quarter, 1976	October 1, 1975
Fall Quarter, 1976	November 1, 1975

Application fee

A nonrefundable fee of $20 is charged for filing an application for admission. A check or money order should be made payable to The Regents of the University of California and should be attached to the application form. Anyone who applies but who is not eligible, or anyone who is admitted and does not register, must submit a new application and pay this $20 fee again when seeking admission at another time.

Duplicate applications

Students should apply to only one campus of the University. If the applicant files simultaneously for admission to more than one campus, the processing of all applications of that prospective student will be suspended until the student notifies the Director of Admissions as to the campus of first preference. Fees submitted with duplicate applications cannot be refunded.

Transcripts

Applicants are responsible for requesting that the high schools from which they graduated and the colleges they have attended send official transcripts of their work promptly to the UCSB Office of Admissions.[1] A high school applicant's preliminary transcript should include, if possible, work in progress and a final transcript should report on that work and include a statement of graduation.

Summary of Application Procedures

1. Obtain application forms for the University either from the counseling office in your school or by writing to the Office of Admissions, Administration 1124, University of California, Santa Barbara, CA. 93106.

2. File application with UCSB, along with non-refundable $20 application fee. At the same time, arrange to have all necessary transcripts sent to UCSB.

Notification of Admission[2]

1. The notification of acceptance will include a Statement of Intention to Register and a Statement of Legal Residence.

2. If you intend to register, return both statements along with a nonrefundable $50 deposit[3] to the Admissions Office. Graduate students do not need to file this deposit.

Change of campus

Should you apply for admission to one campus and then decide to attend a different UC campus, write the Director of Admissions, 570 University Hall, Berkeley CA. 94720. Indicate the new campus and give your reasons for the change. Your application will be transferred to that campus if enrollment is still open there, but you will receive a new admissions priority assignment based on the date on which the request for the change was made.[4]

B2 Admission as a freshman

A "freshman applicant" is one who has graduated from high school but who has not since enrolled during any regular session in any college-level institution.[5]

There are three major requirements for admission as a freshman: 1) The Subject Requirement, concerning the subjects you must have taken in high school; 2) The Grade Requirement, concerning grades and averages in those required subjects, and 3) Examination Requirement, concerning certain tests that must be taken before admission.

Applicants Who are California Residents

These requirements as presented below are for California residents only.[6] Non-residents, including foreign students, should refer to B-4 and B-11 for discussion of those admission requirements.

The following subjects (A, B, C, D, E and F) are required for admission to UCSB.

1. Subject Requirements

A — History - 1 year

One year of United States history or one-half year of U.S. history and one-half year of civics or American government.

B — English - 3 years

Three years of English — composition, literature and oral expression.

C — Mathematics - 2 years

Two years of mathematics — Subjects such as elementary algebra, geometry, intermediate and advanced algebra, trigonometry, cal-

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[1] See address above.

[2] The approximate dates for notification of admission for 1975-76 are: Fall Quarter - May 15, 1975; Winter Quarter - December 15, 1975; Spring Quarter - March 15, 1976.

[3] This deposit is applicable towards the University Registration Fee if you register in the quarter to which you have been admitted.

[4] The processing of a change of campus preference takes several weeks. A wait of at least one month before receipt of communication from the new campus can be expected. Requests for housing information and financial aid will be transferred automatically.

[5] Enrollment in Summer Session following high school does not disqualify an applicant from freshman status.

[6] The legal definition of California residency is located in the appendix of this catalog.

The Court of Sciences, with Goleta Beach in the background.

culus, elementary functions, matrix algebra, probability, statistics or courses combining these subjects. Nonacademic courses such as arithmetic and business mathematics cannot be used.

D — Laboratory Science - 1 year

A year course in one laboratory science, taken in the 10th, 11th or 12th grade.

E — Foreign Language - 2 years

Two years of one foreign language. Any foreign language with a written literature can be used.

F — Advanced Course - 1 or 2 years

This requirement may be satisfied by one of the following:

1.) Mathematics

A total of one year of advanced mathematics — Intermediate algebra, trigonometry or other comparable mathematics courses.

2.) Foreign Language
Either an additional year in the same language used for "E" above or two years of a second foreign language.

3.) Science
A year course in any laboratory science completed subsequent to the laboratory science used for "D" above.

4.) Elective Courses
Although the 10 to 11 units[7] listed above are the only courses used in computing the grade-point average (GPA), a total of 15 high school units is required for admission to the University. The remaining credits provide an excellent opportunity for you to broaden your preparation for University work by taking elective courses in areas other than those in which you have concentrated.

Courses will be accepted for satisfaction of the subject requirements from California high schools only if they appear on a list of acceptable courses certified by the high school principal and submitted to the Director of Admissions. Courses completed out-of-state will be reviewed by the Office of Admissions to determine their acceptability for the Subject Requirements.

If you have not completed one or more of the required subjects, consult the Office of Admissions to learn of acceptable ways of removing these deficiencies, such as completing courses in Summer Session.

2. Grade requirements

A minimum grade of C must be earned in each of the courses required for admission, but the overall average for those subjects taken after the ninth year must be a B (3.0). Grades received in courses taken in the ninth grade or earlier are not used for determining the scholarship average. Grades are considered on a semester basis, except from schools which grade only on a yearly basis. Grades are accepted as they appear on the transcript.

To meet the subject and grade requirements you may repeat up to a total of two semester courses in which you received a grade of D or lower. The grades earned in repeated courses, however, will not be counted higher than a C in determining the overall average. If the courses repeated were taken initially before the ninth grade, only the grade in the second attempt will be included in the grade-point average.

3. Examination requirement

All freshman applicants must submit scores from the College Entrance Examination Board (CEEB)[8] tests listed below. Plan to take these tests as soon as possible. Your school's counselor can provide the dates and further information.

Scholastic Aptitude Test The verbal and mathematics scores submitted from this test must be from the same sitting.

Three Achievement Tests, including 1) English composition, 2) one from the social studies or foreign languages, and 3) one from mathematics or the sciences.

If your grade-point average (GPA) in the required high school subjects is from 3.0 to 3.09 inclusive, you must earn a total score of 2,500 or higher in these tests. If the average is 3.1 or higher, you must take the CEEB tests, even though the scores will not be used to determine eligibility. The test results may be used for counseling and, when applicable, for placement. The English composition score, if above 600, will exempt the student from Subject A.

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[7] A year course in high school constitutes one unit.

[8] Arrangements to take the necessary tests can be made with the **Educational Testing Service, P.O. Box 1025, Berkeley, CA. 94701,** or **P.O. Box 592, Princeton, N.J. 08540.** Test fees should be paid to the Educational Testing Service, not the University. Test scores will be regarded as official only if they are reported directly to the Admissions Office by the Educational Testing Service.

4. Admission by examination alone

If you do not meet the subject and/or grade requirements for admission, you can qualify for admission as a freshman by examination alone. To do so, you must take the same pattern of CEEB tests discussed above but must earn higher scores. The required minimum total score on the Scholastic Aptitude Test is 1,100. The score on the three Achievement Tests must be 1,650 or higher with a minimum of 500 on each test.

B3 Admission to Advanced Standing

Definition

An advanced standing applicant is any high school graduate who has been a registered student and completed units in another college or university, or in college-level extension classes other than a Summer Session immediately following high school graduation. An advanced standing applicant may not ignore a college record and apply for admission as a freshman.

Advanced Standing Admission Requirements

These requirements[9] vary according to your high school record. If you have completed fewer than 12 quarter or semester units of transferable college credit since high school graduation, you must satisfy the Examination Requirement for freshmen.[10]

The transcript submitted from the last college attended must show, as a minimum, that you were in good standing and that you had a cumulative grade-point average of 2.0 (C) or better. If your gradepoint average fell below 2.0 at any college attended, you may have to meet additional requirements in order to qualify for admission.[11]

As an advanced standing applicant, you must meet one of the following three conditions:[12]

1. If you were eligible for admission to the University as a freshman, you may be admitted in advanced standing any time after you have established an overall grade-point average of 2.0 or better in another college or university.

The Pearl Chase Garden, as seen from the Marine Laboratory.

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[9] See B4 for nonresident requirements.

[10] See item 3 in B2 on Examination Requirements.

[11] Contact the Office of Admissions for further information.

[12] These requirements are experimental and will be in effect for applicants through the Spring Quarter, 1977.

2. If not eligible for admission as a freshman only because of lack of one or more of the required high school subjects, you may be admitted after you have established an overall grade-point average of 2.0 or better in another college or university, *and* completed, with a grade of C or better, appropriate college courses in the lacking high school subjects, *and* completed 12 or more quarter or semester units of transferable college credit after high school graduation or have successfully passed the CEEB tests required for freshmen applicants.

If you choose not to make up the subject deficiencies, you may become eligible for advanced standing admission by the following provision:

3. If you were ineligible for admission to the University as a freshman because of low grades, a lack of required subjects, or a combination of both, you may be admitted after having earned a grade-point average of 2.0 or better in at least 84 quarter (56 semester) units of college credit courses accepted by the University for transfer.

B4 Applicants who are not California residents[13]

Admission requirements for freshmen

1. The same subject pattern as for California residents is required.

2. The scholarship requirements for California residents apply to out-of-state applicants except that the non-resident applicants must have maintained a grade-point average of 3.4 or higher in the required high school subjects.

3. The examination requirement consists of the same pattern of tests as for California residents. Scores will be used only for counseling, placement and, when possible, in satisfaction of the Subject A[14] requirement.

4. Admission by examination only is the same as for California residents except that scores of the three Achievement Tests must total at least 1,725 with no score less than 500.

Admission requirements for advanced standing

A nonresident applicant who meets the admission requirements for freshman admission must have a grade-point average of 2.8 or higher in college courses that are accepted by the University for transfer credit.

If a nonresident applicant lacks any of the required high school subjects, college courses in those subjects must be completed with a grade of C or higher. A nonresident applicant who graduated from high school with less than a 3.4 grade-point average in the subjects required for freshman admission must complete at least 84 quarter (56 semester) units of transferable work with a grade-point average of 2.8 or higher. Upon successful completion of that work two units of the required high school subjects may be waived.

B5 Additional information

Credit from another college

The University gives unit credit to transfer students for courses successfully completed at other accredited colleges and universities, including some extension courses.[15] To be accepted for credit, the courses must be comparable to those offered at the University as determined by the Office of Admissions.

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[13] The legal definition of California residency is located in the appendix of this catalog, on page 300.

[14] See F2

[15] See A7 for information on University Extension.

The University accepts, at full unit value, approved transfer courses completed with satisfactory grades in accredited community (two-year) colleges. A student may earn 105 quarter (70 semester) units towards a University degree at a community college.[16] Subject credit for transferable courses in excess of those units will be granted.

College level examination

The University awards credit for certain examinations of the CEEB College Level Examination Program (CLEP). Credit can be given for subject exams which cover work appropriate to a University degree. Such examinations must be passed with a score of 50 or better. Five quarter units will be granted for examinations which cover one semester of work and 10 quarter units for those which cover two semesters of work.

For general examinations in Social Science/History, Natural Science and Humanities, 10 quarter units of credit is given for scores of 500 or better.

Recommended Subjects

Certain preparatory subjects are recommended for various courses of study offered at UCSB. These subjects should prepare the student to pursue competently a chosen field of study at the University. Details of these recommendations can be found in the bulletin *Prerequisites and Recommended Subjects,* which may be obtained from your school's counselor.

Persons not eligible for admission to the University are usually advised to attend one of the California community colleges and take courses applicable towards the requirements of the college or school of the University in which they wish to enroll.

In case a student is technically ineligible for admission to the University, the Admissions Officer has authority and responsibility to consider other evidence of ability to pursue University work.

The Santa Ynez Mountains form a background for the Santa Barbara campus.

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[16] Refer to Ⓖ for further limitations on the acceptability of courses taken in community colleges for students in the College of Letters and Science at UCSB.

B6 Limited status

To apply as a student in Limited Status, you must 1) Have a bachelor's degree but not be a candidate for an advanced degree; **or 2)** Have completed a substantial amount of college work with a satisfactory grade-point average, but not a bachelor's degree; **and** by reason of special attainment or background, be prepared to undertake certain courses in the University toward a definite and limited objective.

Conditions for admission are assigned by the Admissions Officer with the approval of the dean of the college or school in which you plan to study. You must also submit transcripts from all schools attended beyond eighth grade. Students in Limited Status may not enroll in graduate-level courses nor may courses completed in limited status be applied subsequently for graduate degree programs at UCSB.[17]

[17] Further information can be obtained from the Office of Admissions at UCSB.

B7 Second baccalaureate

An applicant with a bachelor's degree substantially equivalent to that granted by the University of California may be allowed to enroll as an undergraduate seeking a second baccalaureate. The applicant must have a superior academic record and indicate a change of objective.

Admission is subject to approval by the Admissions Officer and the dean of the college or school in which the applicant plans to enroll.[18]

[18] See note number 17 above.

Students ride on bike path, part of a seven-mile system linking campus and surrounding community.

B8 Special status

The Special Status classification is designed for students 21 years of age or older who: **1**) have not had the opportunity to complete a satisfactory high school program, **or 2**) have not completed a substantial amount of college work, but by reason of special attainment or background, may be prepared to undertake certain courses at UCSB toward a definite and limited objective. No applicant will be admitted directly from high school.

The Admissions Officer determines conditions for admission, which are subject to approval of the dean of the college or school in which the applicant plans to study. Admission is for a specified time and a prescribed grade-point average must be maintained.

An applicant for Special Status must submit transcripts from all schools attended beyond the eighth grade.[19]

B9 Intercampus transfer

Undergraduates who are or who have been registered in a regular session of any campus of the University of California may apply for an intercampus transfer to another UC campus provided they have not been registered subsequently in a regular term at another collegiate institution.[20] Intercampus transfer applications are available from and must be returned to the Registrar of the campus where the applicant is or was registered.[21]

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[19] See note number 17 above.

[20] E7 contains additional information on intercampus transfer.

Students who have completed course work elsewhere since leaving the UC system must apply for advanced standing admission to the new campus of their choice. They are no longer eligible for intercampus transfer.

B10 Graduate status

Students holding a bachelor's degree or its equivalent from an institution of recognized standing are eligible for consideration for admission to UCSB's graduate status.[22]

Application forms, which can be obtained from the departments or the Graduate Division, must be submitted with a nonrefundable $20 fee. An applicant must also submit two copies of transcripts from each college attended and arrange to have letters of recommendation sent to the Graduate Division. Notification of acceptance or nonacceptance will follow.

Students who do not desire to become candidates for higher degrees, but who wish to enroll in the Graduate Division must meet the same requirements as those who are prospective candidates for degrees. They must be admitted to specific fields of study and must satisfy the Dean that their programs have definite scholarly or professional purposes.

B11 Applicants from other countries

The record of an applicant from another country[23] in either undergraduate or graduate standing is evaluated in accordance with the general regulations governing admission.[24] An application, official certificates and detailed transcripts should be submitted to the Office of Admissions several months in advance of the opening of the quarter in which you wish to gain admittance. For example, if you would like to enroll for the Fall Quarter, 1976, you should apply by November, 1975. Early filing of application will allow time for exchange of correspondence and, upon admission, for obtaining the required passport and visa.

English language examinations

If your schooling has not been in English, you are required to submit the results of the Test of English as a Foreign Language (TOEFL) taken in your home country.[25] Arrangements for the test may be made by writing to TOEFL, Educational Testing Service, P.O. Box 592, Princeton, N.J. 08540. Undergraduates should forward test results to the Admissions Office; graduates to the Graduate Division at UCSB.[26]

If you are from a country in which the native language is not English, when you arrive at UCSB you will have to demonstrate that your command of English is sufficient to profit by instruction at the University. Your knowledge of English will be tested by the English Language Placement Examination given by the University. If you fail to pass this examination, your admission will be deferred until you have acquired the necessary proficiency in the use of English.

You will be exempted from taking the English Language Placement

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[21] Additional information can be obtained from your campus' Office of the Registrar. A $20 nonrefundable application fee is required for intercampus transfer.

[22] See Ⓙ for further information on requirements for graduate status admission.

[23] D2 contains additional information for foreign students.

[24] B1 has information on undergraduate admission and Chapter Ⓙ has information on graduate admission.

[25] This will not exempt you from the ELPE, below.

[26] See inside cover of this catalog for addresses.

Examination (ELPE) **if you meet any one of the five following qualifications.**

1. You are a native of an English-speaking country.

2. You enter the University with a grade of C or better in a composition course which satisfies the English 1-A requirement.[27]

3. You have completed undergraduate English requirements at an American college or university.

4. You have completed all of the required English as a Second Language (ESL) courses at another University of California campus or

5. You hold a master's degree from a university in the United States.

If you take the English Language Placement Examination (ELPE), your results will determine the course of action you must follow:

1. Students who pass this examination will be exempted from all ESL course requirements. Undergraduates must then meet the Subject A requirement.[28] Graduates who pass the ELPE are exempt from further English requirements.

2. Students who do not pass this examination will be required to complete the appropriate portions of the ESL 1A-B-C[29] course series. Undergraduates' performance on the final examination in ESL 1C will determine their status with regard to the Subject A requirement.

In the event that you place at an elementary level of English proficiency, you will be given assistance in finding a suitable and reasonably priced language school for further intensive English instruction prior to entering the University.

In all cases where ESL courses are required, each of these courses should be taken as part of a limited curriculum the quarter it is taken. When only one course is required, it should be taken the first quarter you are in attendance. If two or more ESL courses are required, it is recommended that you take only one of these, with a limited curriculum, in each consecutive quarter.

If you are a student from a country whose language is not English, you will receive college credit in your own language and literature only for courses satisfactorily completed. The courses must be taken in your country at institutions of college level, or at upper division or graduate level at the University of California or another English-speaking institution of approved standing.[30]

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[27] See G3 for information on this requirement.

[28] See F2 for information on this requirement.

[29] See L, Subject A, for course descriptions.

[30] Further information on foreign student admission can be obtained from the Office of Admissions at UCSB.

Campbell Hall is the center of a rich offering of lectures, concerts, recitals, movies and other cultural events.

Ⓒ Expenses, Fees and Financial Aid

C1 Undergraduate student expenses

Certain expenses are common to all students at UCSB; others may vary considerably according to differences in interest. While it would be difficult to estimate the total yearly expenditures of the "average student," the adjacent guide will give an idea of the basic expenses common to California resident undergraduates who live on campus in a University residence hall for three quarters (Fall, Winter and Spring).

The opposite table is a list of additional expenses incurred by students. These will vary depending upon programs of study, interests, needs and resources. The ranges are supplied by the Financial Aid Office and are based on figures compiled over several years, taking rising costs into account. However, these figures are merely guides.

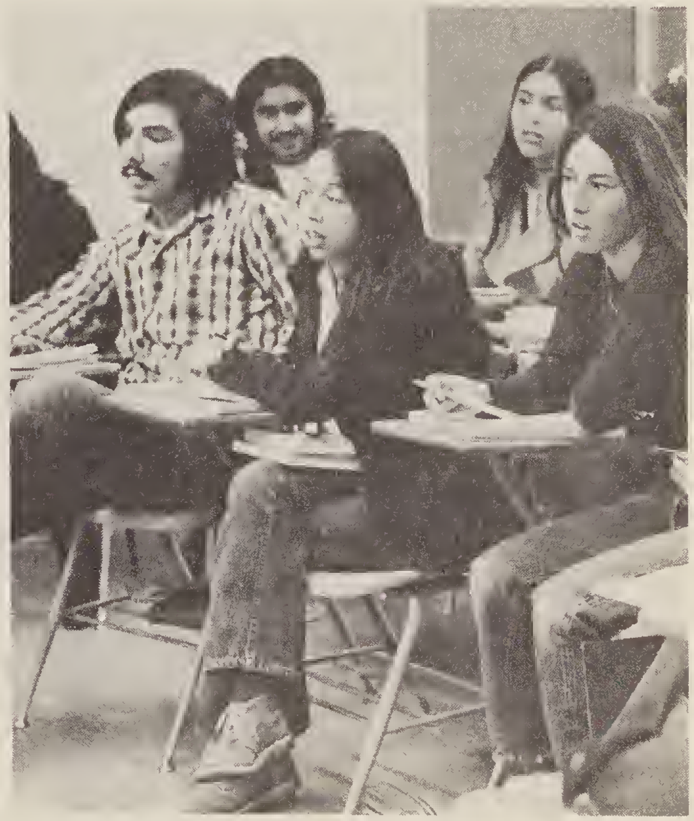
These expenses of course vary. The usual amount is about $800.

Housing expenses for students who do not live in University residence halls are less predictable. For more discussion of off-campus housing expenses, see C3.

Room and board (20 meals a week) for three quarters in a University residence hall, double room rate	**$1,420.00**
Residence Hall Association fee, per year	**12.00**
Fees - including the University Registration Fee ($300 per year), Educational Fee ($300 per year), the Associated Student Fee, Insurance Fee, and University Center Fee	**700.00**
Total Common Three-Quarter Costs	**$2,132.00**[1]

[1] Students classified as non-residents of California must pay an additional $500 per quarter as tuition. See Appendix for definition of "resident" and "non-resident" and refer to B4 for information on academic admission requirements for non-residents. This tuition applies to foreign students as well as out-of-state students.

Geography class charts natural oil seeps by means of aerial photographs.



Fees

Expenses per academic year	Range
Books and supplies, (Usually $200)	$150 - $225
Personal expenses, including clothes, laundry, cleaning, recreation and transportation (Usually $600)	$400 - $800

The following fees are common to every student at UCSB. Newly admitted students will be notified of fee payment deadlines as soon as possible each quarter. These deadlines are also listed in the *Schedule of Classes,* published quarterly. Fees can be paid in person or by mail with a money order, cashier's check or personal check made payable to The Regents of the University of California, and mailed to the Cashier's Office. (See inside front cover for address.) Students should indicate their full legal name and alpha number [2] on the check or by separate letter accompanying the payment. An explanation of the fees follows the table.

	Fall Quarter	Winter Quarter	Spring Quarter
Undergraduate			
Registration Fee	$100.00	$100.00	$100.00
Educational Fee[3]	100.00	100.00	100.00
Associated Student Fee	16.25	16.25	16.25
University Center Fee	60.00	(45.00)	(30.00)
Accident and Health Insurance*	60.00	(45.00)	(30.00)
Total California Resident	$282.25	$222.25	$222.25
Non-Resident Tuition[4]	500.00	500.00	500.00
Total Non-Resident	$782.25[5]	$722.25[5]	$722.25[5]
Graduate			
Registration Fee	$100.00	$100.00	$100.00
Educational Fee	120.00	120.00	120.00
University Center Fee	6.00	6.00	6.00
Graduate Student Assn. Fee	1.50	1.50	1.50
Accident and Health Insurance*	60.00	(45.00)	(30.00)
Total California Resident	$287.50	$227.50	$227.50
Non-Resident Tuition[4]	500.00	500.00	500.00
Total Non-Resident	$787.50[5]	$727.50[5]	$727.50[5]

*Amounts in parenthesis not included in totals.

Application fee

Every applicant for admission must pay a fee of $20 when filing an application. The fee is nonrefundable and can be paid by bank draft or money order payable to The Regents of the University of California.

Deposit fee

A nonrefundable $50 deposit[6] is required of undergraduates when returning the Statement of Intention to Register (SIR) at UCSB. This deposit will be applied to the Registration Fee only if you register in the quarter for which you have been admitted.

University Registration Fee

The University Registration Fee is $100 per quarter both for undergraduate and graduate students. This fee covers certain expenses of students for athletic and gymnasium facilities and equipment, lockers, laboratory and course fees, counseling and placement services, medical advice and hospital care or dispensary treatment furnished by the Student Health Service. This fee is charged whether or not students make use of any or all of these privileges.

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[2] This is the code number assigned when you return your Statement of Intention to Register.

[3] There is a $50 reduction of this fee for undergraduate students registered for less than nine units.

[4] Only required of students classified as nonresidents. See Appendix 1.

[5] These fees are current as of the publication deadline for this catalog, although they are subject to revision by The Regents of the Unniversity of California. If revision of fees does take place, you will be notifed of the revision in more current publications, such as the quarterly *Schedule of Classes*.

[6] Graduate students please note that this $50 deposit does not apply to you.

Educational fee

The Educational Fee is paid by all students registered at UCSB to cover a variety of educational costs as determined by The Regents. California resident students with demonstrated financial need may defer payment of the Educational Fee by accepting an obligation to repay the deferred sum after completion of their higher education.[7]

Undergraduates taking 8½ or less units may be eligible for a $50 reduction of their educational fee. The end of the third week of any quarter is the final date for determining such eligibility. Waivers may be obtained from the Registrar's Office prior to payment of fees. Refunds will be made only if the request is filed on or before the end of the third week. After the determination date, refunds cannot be made if a student's program falls below nine units. Part-time students who exceed the 8½ unit limit will be assessed full-time fees.

Accident and Sickness Insurance Plan

The Associated Students[8] provides an Accident and Sickness Insurance plan for students. All nonimmigrant foreign students, regardless of other health insurance they may have, and all other students who are not covered by another health insurance policy are required to participate in this plan.

The fee is $60.00 for 12-month coverage; $45.00 for 9-months (beginning in the Winter Quarter); and $30.00 for six months (beginning in the Spring Quarter). Payment is made when the other fees are paid.

This insurance plan provides for certain medical expenses, which are not provided by the Student Health Service.[9] Further information and descriptive brochures can be obtained by contactng the Student Insurance Counseling Office, UCen Room 2275-A, University of California, Santa Barbara, California 93106.

Non-Resident tuition

Students who have not been legal residents of California for the established time period are classified as nonresidents and are subject to payment of a nonresident tuition fee of $500 per quarter. Students entering the University for the first time are advised to read carefully the rules governing determination of residency as quoted in Appendix 1. In the event of nonresident classification, they should be prepared to pay the required tuition fee. Entering students and students returning to the University after an absence[10] are required to file a new Statement of Legal Residence upon registration; form will be provided. Status with respect to residency will be determined after receipt of the Statement.[11]

Filing fee

A fee of $50 has been established in certain situations for the filing of a doctoral dissertation, a master's thesis and/or the formal final examination for the doctor's or master's degree.[12]

Intercampus transfer fee

Students wishing to transfer from one UC campus to another must pay $20 with the transfer application.

Readmission fee

A fee of $20 is required when submitting an application for readmission. Application is made to the Registrar.

University Center Building Fee

A University Center Fee is assessed all students. The fee is $6 per quarter and is used to repay construction loans. A waiver may be obtained in the Registrar's Office for those registered for less than six units.

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[7] This deferred provision applies only to the Educational Fee and not to the other fees assessed by the University. Students interested in this provision should contact the UCSB Financial Aid Office for further information.

[8] See Associated Students information in D-6.

[9] D-3 has more information on the Student Health Services.

[10] See E-3 for explanation of absence from the University.

[11] Residency requirements for admission to the University and residency requirements for determining whether or not you must pay tuition are not the same. Admission under California resident requirements does not automatically exempt you from paying tuition. Please read the appendix carefully, and if you have any questions, contact the Office of the Registrar.

[12] J-2 has more information on this filing fee.

Associated Students' Membership Fee

[13] D6 contains more information on Associated Students and fee.

The student membership fee is $16.25 per quarter and is paid at the time of registration.[13] An undergraduate student taking fewer than six units is not required to pay the Associated Students' Fee. Undergraduates can obtain waivers from the Registrar's Office prior to payment of fees. Graduate students pay a GSA fee and it is never waived. Students who change their program to fewer than six units may request a refund of their fee provided the request is made in the Registrar's Office by the end of the second week of classes.

Vehicle fees

All vehicles, including motorcycles and bicycles used on campus, must be registered. A parking fee of $36 per car for 12 months is charged for parking on campus ($30 for three quarters). The yearly parking fee for motorcycles is $7.50. Cars and motorcycles must be registered with the Parking Services Office and are to be parked only in lots designated by permits. Bicycles must be registered with the Community Services Office[14] for a biannual fee of $1.00.

Undergraduate students living off campus within one mile of the campus boundaries (this includes Isla Vista) are not allowed to purchase parking permits for automobiles or motorcycles. Permit holders and students and staff purchasing daily permits may not use a visitor parking zone. A $5 parking fee for cars and motorcycles will be charged students attending Summer Session only.

Traffic and parking violaters will be cited to Municipal Court. Complete information as to parking and vehicle operation may be obtained from the Parking Services Office.[14] Since parking regulations and fees are subject to revision, students are urged to be informed on these matters.[15]

[14] See inside back cover for address.

[15] Parking spaces are becoming increasingly scarce and permits may be denied in the future, depending upon the availability of space. Parking spaces are available, according to the type of parking permit you have, on a first come, first served basis. It is recommended that you try alternate sources of transportation such as car pools, bus service and bicycles. The Housing Office has information on transportation.

Miscellaneous fees and refunds

[16] See inside back cover for address.

Further information on miscellaneous fees is contained in *Student Fees and Deposits,* which may be obtained from the Cashier's Office.[16]

Claims for refund of fees must be presented during the fiscal year in which the fees were paid. Receipts issued for all payments should be retained. Refunds are made only when the original receipt is returned.

All fees are subject to revision by the Regents of the University of California.

C3 Housing

UCSB students have a wide variety of housing from which to choose.[16] The choices range from University-owned campus residence halls and married students' apartments to off-campus rooms, apartments, fraternities, sororities, etc.[17] You are free to choose where to live, but the University strongly recommends that new students, particularly freshmen, reside in campus residence halls.

[17] More information about housing is contained in *Inside UCSB* , which is sent to newly admitted students.

On-Campus Housing

After you have applied for admission to UCSB, you may apply for on-campus housing. Priority for campus housing is based on the date of your application for housing and the date of admission to UCSB. When you return your Statement of Intention to Register to the Admissions Office, a housing contract will be offered to you if space permits.

There are accommodations for 2,600 single students in the six co-educational residence halls on campus: Anacapa, San Nicolas, San Miguel, San Rafael, Santa Cruz and Santa Rosa. You may choose from among three dining halls, De La Guerra, Ortega or Carillo Dining Commons, Located near the residence halls. The price for three quarters (Fall, Winter and Spring) for room and board (20 meals per week) is $1,420.[18] The majority of the rooms are for two students. Rooms are furnished with single beds, chests of drawers, chairs, bookcases and desks. Blankets, bedspreads, sheets, pillows, pillow cases, towels and study lamps, along with any other furnishings, are supplied by students. The residence halls are closed during the Thanksgiving recess and between quarters.

Housing applications are accepted for the following year beginning November 1 for Fall Quarter, July 1 for Winter Quarter and October 1 for Spring Quarter.

University-owned married student apartments

Located near the main campus are two University-operated apartment complexes consisting of 550 apartments for married students. You or your spouse must be registered full time[19] to establish eligibility for residence in these apartments. Vacancies are filled according to the date of application.

These apartments are unfurnished except for a stove and refrigerator; rent is $110-$155 per month including utilities. Applications for these apartments are available from the Office of Housing Services. Leases will be negotiated with tenants after applications have been received by the Housing Office and as vacancies occur.

Sororities and fraternities

UCSB's eight sororities and six fraternities own or lease houses or apartments near the campus and provide lodging and meals for their members.[20]

Privately-owned housing

The Housing Office in the Administration Building maintains a listing of privately-owned accommodations including room and board facilities and apartments available to students. These listings include both shared and individual housing accommodations and represent a broad price range.

Most student apartments are located in Isla Vista, adjacent to the west edge of the University. Nearly half of UCSB's students live in Isla Vista, attracted by its proximity and preponderance of young residents.

Other living accommodations can be found in Goleta, two miles from campus, and Santa Barbara, 10 miles from campus. Undergraduate students may ride the local bus system free of charge during the Fall, Winter and Spring Quarters after showing student identification.

If you decide to live in privately-owned housing off campus, it is recommended that you make all necessary living arrangements personally with the owner or manager rather than by mail. There should be a clear understanding by both parties, in writing, as to rental prices, intended length of stay, charges to be made during vacation periods, etc. A contract is a legal agreement and the terms of the contract are binding.

Prices per person per academic year for private room and board facilities range from $1,375 to $1,650 and apartments range from $575 to $1,150 per student per academic year.

The majority of housing in Isla Vista is managed by local rental agencies. Since there is a rush for apartments just before the beginning of a quarter (particularly the Fall Quarter), you should come to UCSB and make arrangements *before* Registration Week.[21] It may be necessary to arrange to stay for one or two days in a motel while selecting your housing.

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[18] Price subject to change.

[19] Full time for an undergraduate is a minimum of 12 units. Also see J3 for graduate limits.

[20] See D7 for more information on sororities and fraternities at UCSB.

Owners/managers listed with the Housing Office must agree, either in their rental contracts or in a signed agreement with the Housing Office, to submit landlord/tenant disputes[22] to mediation by the Mediation Board. In addition, they must comply with federal, state and local laws, including those pertaining to building and safety codes. It is required that owners/managers sign a nondiscrimination card before listing any accommodations.

The Housing Office maintains locater files and bulletin boards to help students communicate with and assist one another in finding apartments and compatible roommates or in subletting their apartments.

If you have any problems with or questions about living accommodations, please write the Office of Housing Services.[23]

Financial aid

Financial assistance in a variety of forms is available on an annual basis to qualified students at UCSB. The forms of assistance include scholarships, loans, grants and work-study jobs.

Scholarships

Scholarships are awarded to entering and continuing undergraduates on a competitive basis, consideration being given primarily to academic ability, achievement, motivation, promise and need.

Loans

Loans available to students are described in the following pages. Most are long-term, low-interest loans which must be repaid.

Grants

Grants are outright gifts which do not have to be repaid.

Work-study

Under the Work-Study Program, students may interview for a number of jobs both on and off campus, or may locate their own jobs with eligible employers. Employment continues until the amount of Work-Study money awarded has been earned.

Parents and students are expected to make the maximum effort to cover college expenses, but students who would be unable to continue their education without supplemental resources will be given assistance, according to their need with available funds. Need is determined by College Scholarship Service.[24] A copy of the parents' Federal Income Tax return is required. If you qualify as an independent student,[25] you must submit your own current Income Tax return. Funds for financial aid are made available by the Federal Government, the Board of Regents, various private organizations and many interested individuals.[26]

Filing dates

The following filing periods have been established for applications for financial aid in academic year 1976-77.

January 15, 1976 Scholarship and summer work-study applicants *must* file by this date. All other applicants are strongly urged to file by this date.

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[21] This is the week before classes begin.

[22] Not all Isla Vista housing is listed with the Housing Office.

[23] See inside front cover for address.

[24] The College Scholarship Service (CSS) is an activity of the College Entrance Examination Board concerned with improving equal educational opportunity. The CSS through the determination of financial need assists in the equitable distribution of financial assistance to students.

[25] Contact the UCSB Office of Financial Aid for criteria. See inside front cover for address.

[26] Students receiving monetary awards from sources outside of the University must declare these when requesting financial aid at UCSB. Such awards are considered as student assets in determining total need.

April 15, 1976 Filing deadline for those who wish to be given first priority consideration for available funds.

After April 15 Applications are accepted throughout the year, but after April 15 students will be considered only for funds available after financial requirements of those who applied by April 15, 1976 have been met.

Applications for all programs of financial aid, including scholarships, must be supported by a confidential financial statement, and the appropriate Federal Income Tax Return.

One basic application form (if submitted to the Office of Financial Aid by January 15), entitles the qualified student who has established finnancial need to consideration for scholarships, summer work-study, and other types of assistance.[27] Current UCSB application forms may be obtained after October 1 from the Office of Financial Aid.[28] The necessary Parents' Confidential Statements must be submitted to the College Scholarship Service[29] as early as possible. These forms may be secured from high school or college counselors or from the UCSB Office of Financial Aid.

Married students or qualified self-supporting students will be required to submit an additional supplemental form, a Student's Financial Statement, obtainable only from the UCSB Office of Financial Aid, together with a copy of their Federal Income Tax return.[30]

The Office of Financial Aid publishes an informative brochure which supplies detailed requirements and qualifications for financial assistance. The brochure *You CAN Afford To Go To College!* may be obtained by writing the office.

Awards are announced in May and June. Tmey take the form of a "package" made up of a combination of offers from the scholarship, loan, grant and work-study funds, as the applicant's needs require. Awards may be adjusted at any time upon notice of receipt of non-University or outside agency funds and any resources not previously accounted for, including campus employment. Awards may also be increased throughout the year for a variety of reasons depending upon availability of funds.

Please note that you should not wait for notification of admission to the University to apply for financial aid. Also, an offer of financial assistance does not imply or insure admission to the University.

Summary of Financial Aid Application Procedures

1. Obtain application forms from school counselor or UCSB Office of Financial Aid beginning October 1.

2. Obtain Parents' Confidential Statement at the same time and place.

3. Submit *application* to UCSB by January 15 if you want to be considered for scholarship assistance for the following academic year, or for summer work-study. For first priority consideration for all other funds, submit application as early as possible but no later than April 15.

4. Submit the Parents' Confidential Statement (PCS) to College Scholarship Service, Box 1501, Berkeley, CA 94701. Independent students who file a Student's Financial Statement (SFS) should turn in that document directly to the Office of Financial Aid at UCSB. Send appropriate IRS return to UCSB Financial Aid Office.

5. Awards are announced in May and June.

C5 Undergraduate scholarships

Undergraduate scholarships are awarded competitively on the basis of academic achievement and, with the exception of Regents and Chancellor's Honorariums, of need as determined by College Scholarship Service criteria and available funds. All scholarships must be applied for each year. Included in the scholarship group are:

The Regents Scholarships

These awards are based solely on academic excellence and exceptional promise. Students are eligible to apply upon graduation from high school or completion of the college sophomore year. The term of appointment, subject to annual review, is four years for students entering from high school, and two years for college sophomores. Awards may be honorary in nature or may be accompanied by a stipend covering the scholar's need as determined by

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[27] See C7 and C8 for instructions regarding mandatory California State Scholarship and Basic Opportunity Grant applications.

[29] Box 1501, Berkeley, CA 94701.

[28] See inside front cover for address.

[30] You must meet certain established criteria to be classified as an independent student for the purpose of receiving financial assistance. The mere desire to be independent of your parents and to reject their support cannot qualify you for financial aid.

College Scholarship Service criteria. At the time of their original appointment, Regents Scholars receive an honorarium of $100, regardless of financial need. Regents Scholarship applicants not wishing to apply for a stipend need not file a Parents' Confidential Statement and should so indicate on the application form.

President's Scholarships

These one-year awards are made annually to entering and continuing students. Upon application, a student may be reappointed a President's Scholar, but may not hold this award for more than four years. President's Scholarships are granted on the basis of achievement, financial need, and promise. The maximum stipend is $500; however, these scholarships may be supplemented by other forms of financial aid as required to meet a student's established need.

Mirrored in the lagoon are the Storke Publications Building and the University Center, housing student offices and recreational facilities.

Chancellor's Scholarships

Students demonstrating high academic potential may be considered for a $100 Honorarium which is given by the Chancellor of the University of California at Santa Barbara. Since outstanding academic potential is the only criterion for a Chancellor's award, students wishing to apply for this program need only submit a Financial Aid application and the required scholarship material.

Community college transfer scholarships

A limited number of scholarships will be awarded to community college transfer students who have established financial need and have completed 56 or more transferable semester credits. These scholarships are awarded for two years with renewal for the second year subject to review. The maximum stipend is $800; however, these scholarships may be supplemented by other forms of financial aid as required to meet a recipient's established need.

Other scholarships

In addition to the above, other scholarships are awarded annually by the Chancellor to undergraduate students on the basis of need and high academic achievement. For the 1975-76 academic year, these awards range from $100 to $1,000 and may be supplemented by other forms of financial aid as required to meet the student's established need. The scholarships listed in the adjacent column were contributions made possible through the cooperation of individuals and private organizations in 1974-75. The local gifts and endowments are available to UCSB students only. The University-wide endowment funds are not all necessarily available each year as some rotate.

Local Gifts and Endowments

Alumni Association (Includes contributions from UCSB Alumni, Santa Maria Alumni Chapter, Residence Halls Association)
Avery-Clay Memorial Scholarship Fund
California Congress of Parents and Teachers, Inc.
John and Ina Therese Campbell Scholarship Fund
Ralph W. Church Scholarship Fund
Floralyn Cadwell Conway Scholarship Fund
John S. Edwards Scholarship Fund
Faculty Women's Club Scholarship
Hazel S. Lagerson Scholarships
William C. and Florence W. Matthews Fund
Kevin P. Moran Memorial Fund
Samuel B. Mosher Scholarship Fund
Isabelle Price Memorial Scholarship Fund
Santa Barbara Scholarship Foundation
Arthur H. Tucker Scholarship Fund
UCSB Foundation Scholarships
UCSB Foundation, Parents Fund Scholarships
Mildred Wright Memorial Scholarship
(Soroptimists Club of Santa Barbara)

University-wide Endowment Funds

Sarah M. Armstrong Scholarship Fund
George and Marjorie Butler Scholarship Fund
Kenneth and Florence Caldwell Scholarship Fund
Caroline J. Clow Scholarship Fund
Brython P. Davis Scholarship Fund
Elizabeth Dineen Scholarship Fund
Leon F. Goodman Scholarship Fund
Gordon-Macneil Scholarship Fund
Walter Karabian Scholarship Fund
Edward F. Kraft Scholarship Fund
Laura P. Mahan Scholarship Fund
Eugene and Harriet Meyer Scholarship Fund
John A. W. Miller Scholarship Fund
LaVerne Noyes Scholarship Fund
Mabel Wilson Richards Scholarship Fund
Werner B. Scott Scholarship Fund
William W. Stout Memorial Scholarship Fund
Frank and Carolan Walker Scholarship Fund

The Office of Financial Aid also maintains an agency scholarship section which enables private individuals and outside agencies to distribute scholarship or loan funds to their selected recipients.

Graduate fellowships

Graduate students interested in UCSB graduate fellowship programs should contact the Graduate Division for information and applications.[33]

Other financial aid

Other types of financial aid are available to qualifying graduate and undergraduate students according to established need and the application deadlines stated above. These programs include:

UC Grants

These awards are made in varying amount to graduates and undergraduates who establish substantial need.

Basic Opportunity Grant (BOG)

This federal aid grant program is designed to provide financial assistance to those who need it in order to attend post-high school educational institutions. All students who meet the initial eligibility requirements should apply for this form of aid. Separate applications are required. These are available at high schools and from the Office of Financial Aid. The application deadline is noted on the form. Other financial aid cannot replace BOG awards for which students fail to apply.

Improved Access Grant

The Regents of the University have made funding available for grants-in-aid averaging not more than $700 per academic year to eligible undergraduate students. Such students must have been admitted to the University with at least 84 units (56 semester units) and not more than 135 units (90 semester units) from a California community college or other accredited collegiate institution, excepting the University of California. A cumulative grade point average of not less than 2.0 is required and emphasis is given to community college transfers.

Educational Fee Grant

The Regents have also provided funds with which eligible applicants may be awarded a maximum of $100 per quarter for the first three consecutive quarters of attendance. To qualify, a student must be a resident of California and an undergraduate in the first three consecutive quarters of attendance at the University of California.

Supplemental Educational Opportunity Grants (SEOG)

This federal program provides funds for undergraduate students who have exceptional financial need and show evidence of academic or creative promise. Grants range from $200 to $1,500 a year, and must be awarded in combination with other financial aids.

Associated Student emergency grant

Through funds provided by the Associated Students, these small grants are made available to meet unexpected, unanticipated expenses. A student need not be a Financial Aid recipient to apply, but must be an enrolled undergraduate student. The Associated Students also provide funds for Grants-in-Aid to students with proven financial need.

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[33] See inside front cover for address.

Work-study program

An eligible student may be provided either an on-campus or off-campus job with a participating non-profit agency which would provide up to 15 hours per week employment during the school year and 40 hours per week during vacation periods.

National Direct Student Loans (NDSL)

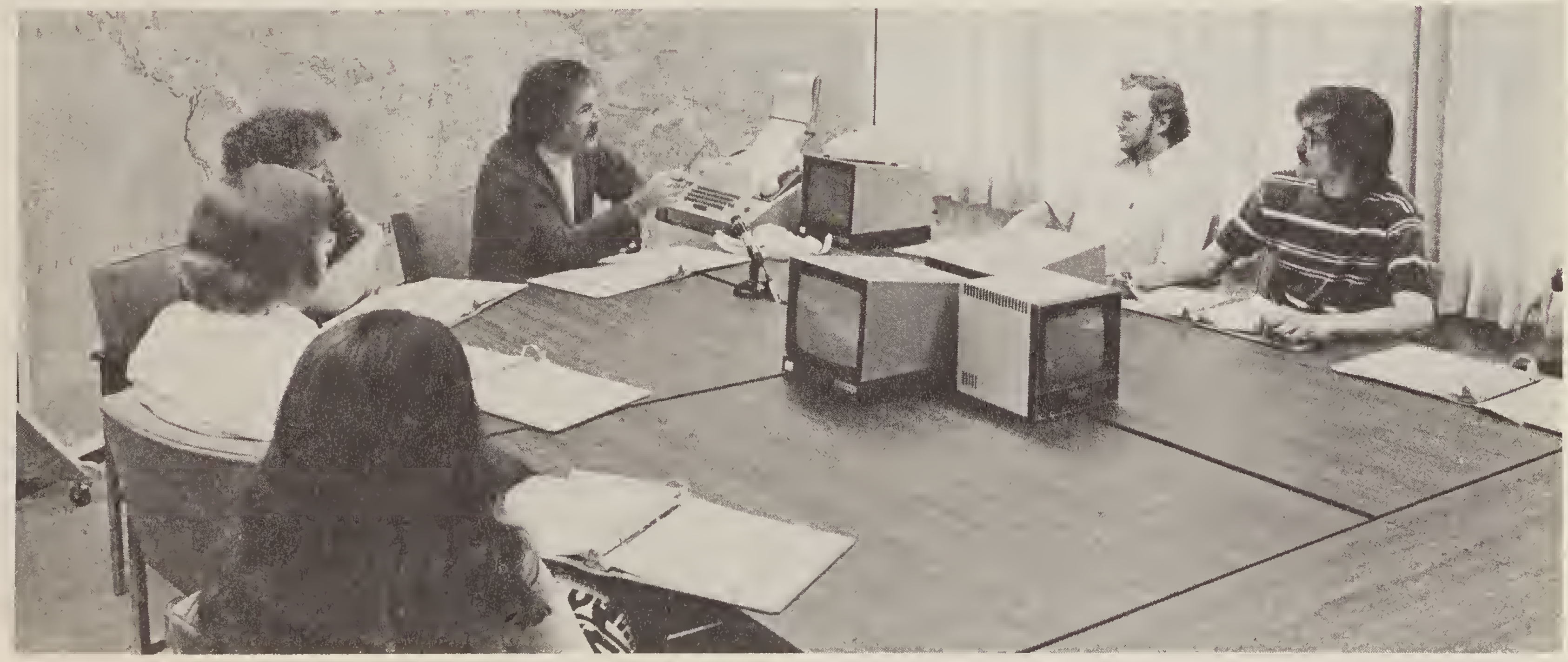
Enrolled students who are citizens or permanent residents of the United States may receive assistance according to need from these federal funds. The loans are interest free for as long as the borrower remains enrolled as a student, and carry simple interest at three percent during the repayment period which may be extended over ten years' time.

Federally Insured Student Loans (FISL)

The FISL is a long-term loan made by lending institutions (banks, savings and loans, credit unions, etc.) upon certification by the Office of Financial Aid. Interest is seven percent per annum and repayment is a minimum of $30 monthly. Repayment does not begin until nine months after graduation or withdrawal. Interest benefits, whereby the government pays the interest accruing while the student is enrolled, are available to applicants with less than a $15,000 adjusted income and who wish to borrow less than $2,000. No "needs analysis" is required to applicants in this category. Interested applicants are advised that a FISL loan must be counted as a resource in meeting evaluated need if the student has filed or intends to file for financial aid. Applications are available from the Office of Financial Aid.[34]

Educational fee deferment loan

The Educational Fee was established by the Regents in 1970. Students who are legal residents of the State of California and who have demonstrated financial need may defer payment of this fee by accepting an obligation to repay it after completing their higher education. Repayment terms are similar to those of the National Direct Student Loan, i.e., repayment at three percent interest beginning nine months after termination of enrollment.


International relations are studied by means of computer-based "game" in POLIS lab.

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[34] See inside front cover for address.

Registration Fee loan

Graduates and undergraduates who are not receiving financial assistance from the Office of Financial Aid may apply for this loan. To alleviate a financial emergency, an eligible student may borrow up to $600 of assessed fees, provided an identified source of repayment is available. Repayment must be made by a specified date during the quarter and a $5.00 service charge is applied to each loan.[35]

Teaching Assistant loans

Students who are under contract with the University as Teaching Assistants or the equivalent may, 30 days before the effective date of employment and before receipt of the first paycheck, borrow up to one month's salary. The full amount of the loan, plus a one percent interest charge, must be repaid from the first three paychecks. The loan is available during the initial period of employment only.

Emergency and short-term loans

Students in good standing who find themselves in a financial emergency should inquire at the Office of Financial Aid regarding short-term loans. Loans are available from the following funds.

Emergency and Short-Term Loans

Marvin M. Appel Scholarship Fund
California Federation of Women's Clubs Loan Fund
Mary L. Cheadle Emergency Loan Fund for Foreign Students
Lawrence E. Chenoweth Memorial Loan Fund
John Lalia Conway and Floralyn Cadwell Conway Scholarship Fund
Erickson-Werner Memorial Loan Fund
David Gray, Jr. Loan Fund
Elias Hick and Edward Barnes Jones Foreign Students Loan Fund
Kiwanis Book Loan Fund
Willis Edwin Leonard Memorial Loan Fund
Los Rancheros Pobres Loan Fund
Steve McNally Memorial Loan Fund
Ednah Rich Morse Loan Fund
Upton S. Palmer Loan Fund
Dr. Paul Perigord Loan Fund
Pioneer Memorial Student Loan Fund
Isabelle Price Memorial Loan Fund
Regents Loan Fund
Santa Barbara County Federation of Women's Clubs Foreign Students Loan Fund
Santa Barbara Senior Loan Fund
Warren E. Schutt Memorial Loan Fund
Laura E. Settle California Retired Teachers Association Loan Fund
Jody Thoele Memorial Fund
John H. Tokuyama Memorial Loan Fund
UCSB Memorial Student Loan Fund
  Diane Avery Memorial
  Cathy Clay Memorial
  California Congress of PTA
Kirk D. Phillips Memorial
  Yves and Manon Surcouf Memorial
  Ronald Joe West Memorial
Anna Vishanoff Memorial Loan Fund

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[35] This loan must be paid back by the end of the quarter in which it is made. If it is not paid back, the student will not be allowed to register until it is paid.

Associated Student loans

Enrolled undergraduate students may borrow small sums on a short-term basis from the Associated Students. Application should be made at the Associated Student Cashier's Office located in the University Center (third floor).[36]

Alumni Association loans

Enrolled undergraduate and graduate students may borrow from loan funds provided by the Alumni Association. Three funds provide $25 loans for a period of 45 days. A $.25 administrative fee is charged. The only requirement for receiving such loans is a valid registration card.

Law Enforcement Education Program

Loans and/or grants are available to qualifying in- or pre-service local, state, or federal law enforcement officers enrolled on a full or part-time basis. Further information is available from the Office of Financial Aid and from University Extension.

State and departmental awards

The following financial aid programs require separate and special applications. Further information and application forms may be obtained from the UCSB Office of Financial Aid, high school and community college counselors, or the appropriate academic departmental office.

California State Scholarships

These State awards which are applied toward Registration Fees may be held concurrently with other University awards. Students who have been enrolled for nine quarters or less must apply for a California State Scholarship since other financial aid cannot replace State Scholarships for which students failed to apply.

California Opportunity Grants

These grants are made available through the California State Scholarship and Loan Commission.

Undergraduates in chemistry lab.

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[36] See map for location and inside front cover for address.

College of Engineering

A limited number of awards based on scholastic promise and achievement are available. Students should contact the Office of the Dean, College of Engineering.[37]

Speech and Hearing Fellowships

A limited number of federally sponsored fellowships are available to advanced students majoring in speech and hearing. One fellowship is available for work with emotionally disturbed children. Students interested in and qualifying for such assistance should contact the Speech Department Office.[37]

U.S. Army ROTC Scholarship Program

Army ROTC Scholarships are available to selected applicants. These scholarships pay all costs for tuition, registration and laboratory fees, expenses for books, and $100 a month cash to the student. Full four-year scholarships are offered to high school seniors selected in a nationwide competition. A limited number of one, two and three-year scholarships are also available to outstanding students enrolled in the ROTC program at the University level. Upon graduation the recipient must serve four years in the U. S. Army and accept a Regular Army Commission if it is offered.[38]

Prizes and awards

Through the generosity of friends of the University, the following prizes are available to students in accordance with conditions set by the donors. Information about competitions will be published from time to time in the campus newspaper.

Academic Excellence in Psychology
Alliance Francaise Medal
Alumni Association Awards
Alpha Lambda Delta Book Award
Art Affiliates Award
Art History Scholarship
Stuart L. Bernath Undergraduate Prize (History)
Ina Coolbrith Memorial Poetry Contest
Calouste Gulbenkian Foundation Scholarship for Students of Portuguese Language and Culture
Edwin Corle Memorial Undergraduate and Graduate Book Collection Contest Awards
Pierre Delattre Memorial Fellowship
Hermione Chevallier Prize in French Literature
Dutch Books
Entering Freshman Scholarships in Chemical Engineering
William H. Ellison Graduate Prize (History)
Harry K. Girvetz Memorial Prize in Philosophy
Genevieve Haight Memorial Award
Intercollegiate Athletics Scholarship Award
Willard L. McRary Memorial Chemistry Prize
Master of Fine Arts Scholarship
Mortar Board Award
Music Affiliates Awards
The Arnold Nordsieck Memorial Prize in Physics
Outstanding Graduating Seniors by Department
Outstanding Greek Man
Outstanding Greek Woman
Outstanding Junior in Chemical Engineering
Outstanding Sophomore in Chemical Engineering
Outstanding Speaker Award
Francis Price Hispanic Studies Award
Research Promise in Psychology
Warren E. Schutt Memorial Award
Aida and Philip Siff Prize (Philosophy)
Aida and Philip Siff Purchase Art Award
John C. Snidecor Award for Excellence in Speech Pathology and Audiology
Thomas More Storke Medal for Excellence
University Service Awards
Sylvia and Irving Wallace Poetry Prize
C. Douglas Woodhouse Award in Geology
The Affiliates Trophy to Superior ROTC Cadets
The Military Order of World Wars Award to Outstanding Senior ROTC Cadet
The Society of Colonial Wars Award to the Outstanding Junior or Senior ROTC Cadet for Leadership and Scholastic Excellence
The National Sojourners Americanism Award to the Outstanding ROTC Cadet as a University-Citizen
The Santa Barbara Retired Officers Club Awards for Outstanding ROTC Cadet Leadership
The Daughters of the American Revolution Gold Medal to the Outstanding Senior ROTC Cadet for Academic and Military Achievement
The American Legion Awards for General Military and General Scholastic Excellence
The Reserve Officers' Association Gold, Silver, and Bronze Medals for ROTC Cadets Demonstrating Excellence in Leadership, Character and Academics
The Association of the United States Army Medal for Outstanding Military and Academic Achievement by a Junior ROTC Cadet
The Association of the United States Army Award for Excellence in Military History by a Sophomore ROTC Cadet
The Sons of the American Revolution ROTC Medal to the First-Year ROTC Cadet Demonstrating All-Around Military and Scholastic Excellence
The Roy E. Mayo Scholarship to any ROTC Cadet for Military and Academic Excellence and Demonstrated Financial Need
The Friends of the ROTC Scholarship to any ROTC Cadet Demonstrating Academic Excellence, Military Merit and Financial Need.

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[37] See inside front cover for address.

[38] Applicants and those interested in further information should contact the Military Science Department. See inside front cover for address.

Educational Opportunity Program

The Educational Opportunity Program is designed to motivate, recruit, admit and support high school and community college transfer students from low-income families. The program, which began at UCSB in 1965 with two students, increased to approximately 800 students for fall, 1975.

Emphasis is placed on the community college transfer student, but recruitment is carried out both at the high school and community college levels. Students are selected for the program on the basis of several factors, including: the assessed financial need, recommendations, an autobiography, transcripts, test scores, and a personal interview. Students are encouraged to apply even if they do not meet the regular University requirements.[39]

An admitted student's Financial Assistance Award is determined by the Office of Financial Aid through use of the Parents' Confidential Statement and a copy of the appropriate income tax forms. It is the goal of the EOP to provide sufficient financial aid to enable students to complete their University education.

EOP offers counseling relating to personal matters ranging from financial aid to problems of adjustment. The EOP also maintains an Academic Tutorial Program which provides tutors in the major academic fields. These tutors will meet individual EOP students upon request. Those wishing further information should contact the EOP Office.[40]

Cancer research is conducted by students in the physics department's scientific instrumentation program.

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[39] See Ⓑ.

[40] See inside back cover for address.

Ⓓ Student Services and Activities

D1 Academic counseling

Many sources of academic counseling are available to students at UCSB. Undergraduates may seek assistance from advisors in their college office and major department. Counseling for graduate students is provided by the Graduate Division and departmental Graduate Advisors. Pre-professional guidance is available to students considering careers in Business Administration, Dentistry, Education, Law, Medical Technology, Nursing, Physical Therapy, Special Education, Speech Therapy and Veterinary Medicine.[1]

A special advisory committee assists pre-med students. It offers general counseling, information about entrance requirements, and application schedules for various medical schools. Further information may be obtained from the Dean of the College of Letters and Science or from the Department of Biological Sciences.

Credential counseling

Several types of counseling are available to students regarding teaching credential programs.[2] This counseling usually takes the form of weekly meetings concerning the UCSB credential program, credential programs at other schools, and job opportunities and qualifications for teachers.

D2 Nonacademic and personal counseling

Office of Student Affairs

The Office of Student Affairs offers help regarding individual problems and concerns. Located on the third floor of South Hall, it will assist you with such specific details as official signatures on a "Good Student Conduct" insurance form, verification of unavoidable absence from academic commitments, and recommendations to graduate or professional schools. Special services for physically handicapped students and veterans are also provided in this office.

Other services available on campus include Foreign Student counseling, orientation of new students, a child care center, a campus activities office and an information and referral center.

Counseling Center

By helping you to explore your aptitude and interests in relation to your work at the University, the Counseling Center will aid your growth as a total person — emotionally and academically.[3] The professional and paraprofessional people who staff the Center offer comprehensive, confidential, personal services without charge to registered students. Educational and vocational counseling is also available at the Center.

Additional specialized services are offered by the Isla Vista

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[1] See the *Letters and Science Announcement*.

[2] See Ⓚ for more information about credentials. Also see the *Graduate School of Education Announcement*.

[3] See inside front cover for address.

Human Relations Center, and the Reading Study Center.[4]

[4] Inquire at the Counseling Center for the location of these offices.

Campus Information Center

The Campus Information Center is designed to help you to find more easily the information, people, or office you may need.[5] Staffed by students and full-time personnel, it has the latest information regarding academic programs, deadlines, and requirements, as well as other programs and activities. As a complete directory for the campus, it can help you if you are unsure where to go for the assistance you need.

[5] See inside front cover for address.

Foreign student counseling

Every student from another country must report to the International Student Office when first arriving on campus. You should bring your passport and visa documents with you to the Office.[5] The office houses the Dean of International Students, the staff and an informal meeting place, the Cafe Interim, for all UCSB foreign students. The Dean and staff are available to provide any assistance you may need in matters pertaining to your stay at UCSB.

The Education Abroad Program, with University-wide offices located at UCSB also has a staff available for consultation with exchange students. See L, EAP section.

Veteran and ROTC counseling

Students who are veterans or the children of disabled or deceased veterans may be eligible for Federal educational benefits. Qualified California veterans and their dependents are also entitled to certain educational benefits. Contact the Student Affairs Office for information. A staff of military personnel is available on campus for counseling students in the ROTC program.[6]

The Office of Veterans' Affairs assists veterans before and after admission to UCSB, and includes a group of peer counselors who work with fellow veterans.[5] Tutorial assistance for veterans is arranged by this office; emergency loans are available. The staff also works in the community to increase awareness of various veteran benefits.

[6] See L, Military Science, for information regarding the ROTC program.

[5] See inside front cover for address.

D3 Student Health Service

The Student Health Service assists students to maintain their physical and mental health.[5]

Certain short-term health care services are covered by payment of the quarterly Registration Fee:[7] **1)** Nurse and physician consultation, including general and internal medicine, orthopedics, podiatry, dermatology, gynecology and psychiatry; **2)** Medications and dressings administered by nurse or physician; and **3)** Laboratory, x-rays and bed-patient care (excluding cost of meals) as ordered by a staff physician.[8]

The following health care services are provided at additional charge: 1) Special laboratory, x-ray and other diagnostic procedures; **2)** Antigen injections, special medications and immunizations; **3)** Continuing treatment for long-term medical problems which existed prior to enrollment, and which the Student Health Service is staffed and equipped to provide; **4)** Transfer of medical information to colleges outside the UC system, insurance agencies, attorneys, etc; **5)** Special medical examinations; **6)** Prescriptions

[5] See inside front cover for address.

[7] See C2 for more information about the Registration Fee, and E1 for medical evaluation requirement.

[8] These services are available on a prepaid basis so long as the student remains registered and for seven days thereafter.

filled in the Student Health Service Pharmacy; **7)** Dental Clinic; **8)** Conception Counseling and Information Clinic; **9)** Physical therapy procedures; and **10)** Eye care clinic.

Insurance for off-campus care

Student Health Service care may be supplemented by the purchase of the Accident and Sickness Insurance Plan sponsored by the Associated Students.[9] This plan provides benefits for certain medical expenses that are not provided by the Student Health Service. New students will receive further information about this insurance plan prior to payment of fees.

[9] C2 has more information about insurance.

Foreign student health insurance requirement

Foreign students holding nonimmigrant visas are required to purchase the Student Accident and Sickness Insurance Plan as a condition for registering at UCSB. Information about this plan will be sent to foreign students with their application for admission. The insurance premium[10] is payable at the time of registration. Foreign students must also purchase insurance for any dependent who accompanies them to Santa Barbara; such coverage is available under the Associated Students Plan.

[10] C2 has premium information for this insurance plan.

D4 Services to handicapped students

The Student Affairs Office assists handicapped students with special needs such as parking, housing, and equipment.[11] The Student Special Services Office provides such assistance as tutoring and counseling to handicapped students.[11]

Students with physical, emotional or other disabilities which handicap them vocationally may be eligible for the services of the State Department of Rehabilitation. These services include vocational counseling and guidance, training (with payment of costs such as books, fees, tuition, etc.) and job placement. Under certain circumstances students may also qualify for help with medical needs, living expenses and transportation. Students who believe they may qualify for such assistance should contact the Santa Barbara District Office of the State Department of Rehabilitation.[12]

[11] See inside front cover for address.

[12] District Office:
State Department of Rehabilitation,
411 E. Canon Perdido Street,
Santa Barbara, CA 93101.
The telephone number is (805) 963-4351.

D5 Other services

Orientation

A voluntary orientation program, offered each summer, is often the students' first contact with UCSB. The program, which is conducted by the College of Letters and Science and the Student Affairs Office, includes testing, advising and pre-enrollment. Freshmen and their parents are invited to attend one of a series of two-day orientation progams designed to acquaint participants with the campus, its academic offerings and registration procedures. Special sessions are offered for transfer students. Participants live in University residence halls during the program.

Orientation activities are also held on campus during Registration Week in the Fall. The *Schedule of Classes* lists meetings at which attendance is required. In addition, a student-organized program known as "Rebysont" coordinates and publicizes a variety of programs to acquaint the new student with the campus and the community. Specific orientation programs are offered for particular groups such as Foreign Students and Educational Opportunity Program Students.[13]

Social Security

Students who qualify should apply for Social Security benefits at their local Social Security Office.[14] Students must carry a minimum of 12 units per quarter in order to receive such benefits.

Office of Student Special Services

This federally funded program is designed to provide certain educational services to students from low income families and disabled students who need assistance in order to succeed in the University. Such services include tutoring and special counseling. Students interested should write directly to the office.[15]

Speech and Hearing Center

The Speech and Hearing Center is open to students with speech or hearing disorders.[15] Staffed by professionally certified speech pathologists, audiologists, and student clinicians, the Center will evaluate such problems and provide appropriate treatment. There are no fees for these services.

Child Care

The University-Community Child Care Center on the West Campus provides day care for two-to-five-year-old children of students, faculty and staff. After-school care is also offered for eligible children from kindergarten to third grade. Information about this service may be obtained from the Student Affairs Office.[15]

Ombudsman

The Campus Ombudsman serves as a troubleshooter for students, faculty and administrative staff members whose problems have not been resolved by other campus agencies. For assistance, contact the office of the Campus Ombudsman.[15]

Career Development

The UCSB Career Development program seeks to coordinate the efforts of several campus agencies — the Counseling Center, the Placement Center, individual academic departments, the Student Affairs Office and the College offices — which offer career counseling. These offices can provide you with information and assistance in your career planning. A good starting point is the Counseling Center Career Resources Room.[15]

Placement Center

The Placement Center assists students and graduates in finding suitable employment.

If you take a part-time job as a student, you should arrange your work schedule after your class program for the quarter has been established. To avoid jeopardizing your academic progress, you should plan no more than 20 hours employment per week as a new student. Information about summer work is also available in the Placement Center.

Investigation of future employment possibilities in various occupational fields is often helpful to undergraduates in determining their academic goals. You are invited to visit the Placement Center for assistance in such matters.

Early in the last year of your attendance on campus, you are urged to utilize the Placement Center facilities in seeking full-time or career employment. Advisers are available to work with seniors and graduates interested in positions in business, industry, government, social services, etc. Other advisers are assigned to work with credential students seeking employment in the field of education, and with advanced degree candidates.

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[13] For further information, contact the directors of these programs. See inside front cover for addresses.

[14] The Santa Barbara Social Security Office is located at 3311 State Street, Santa Barbara, California. Telephone number (805) 687-6630.

[15] See inside back cover for address.

The Placement Center advises about all phases of the job search, maintains a vacancy listing service and a collection of vocational and occupational resource materials, coordinates on-campus interviewing, and provides a reference file service.[16]

The University Post Office

A branch Post Office, located in the University Center, provides full postal services including the rental of locked mail boxes. Since mail is not delivered to residence halls, students living on campus should plan to rent a box. Post office boxes are also available for students living off-campus. Box applications may be made prior to registration by applying to the University Branch Post Office.[17] The cost is $2.00 a year.

Dean of Student Residents

The Dean of Student Residents office coordinates on-campus Interest Halls, which include Creative Arts, Environmental Awareness, Spanish, Natural Sciences, and International Relations. Students from the residence halls may sign up for any of the classes or class sections taught in the halls. Residence halls students may also seek other assistance from the professional staff in the Dean of Student Residents office, including help with personal problems, planning group social and recreational functions, information about recreational and educational resources on campus and in the community, and information regarding Resident Assistant and Head Resident positions in the six on-campus residence halls.[18]

D6 Student activities

The University Center

The University Center (U-Cen) is the focal point for student activity at UCSB. It serves as a gathering place for the campus community and provides a wide range of services and programs, ranging from art exhibits to a coffee house to lectures. Students work together to plan and implement these activities. Located in the Center are the Campus Bookstore, a coffee shop and dining room, music listening rooms, recreation areas, art studios, conference rooms, lounges and other facilities connected with student activities on campus.

D7 Student government

The Associated Students (ASUCSB)

Undergraduate student government is organized and administered by the Associated Students, in which all undergraduates hold membership by virtue of paying the required ASUCSB membership fee[19] at registration. The student government consists of committees and boards under the direction of the Associated Students Legislative Council. All members are entitled to participate in Associated Student affairs and activities. Membership also includes reduced admission fees to athletic, dramatic, social and other Associated Students events.

[16] The Placement Center, upon request by students or alumni, will maintain a reference file to which potential employers may be directed. Such files are maintained permanently in the Placement Center Office.

[17] See inside front cover for address.

[18] The Office of the Dean of Student Residents is located in the trailers opposite Anacapa Hall and next to the Counseling Center.

[19] See C2 for information on this fee.

Graduate Students Association (GSA)

The Graduate Students Association is composed of all UCSB graduate students and seeks to represent their views and interests. The Association is governed by an elected council and an executive committee whose monthly meetings are open to all members.

The Association appoints students to various University committees, and regularly publishes a newsletter. Graduate students seeking help or information are invited to visit the GSA office.[20]

Eligibility for office in student organizations

Undergraduate student candidates for office must have an overall average of at least C (2.0), a C average or higher for the previous quarter, and must carry a program of no fewer than 12 units for the quarter in which they expect to hold office.

Student organizations

General

UCSB boasts a large number of recreational, departmental, service and special-interest student organizations on its campus. Social fraternities and sororities and national honorary and professional fraternities are also available for interested and qualified students. If you would like information about existing student groups or about forming a new group, contact the Campus Activities Office in the University Center.[20]

Honorary Academic Organizations

Alpha Lambda Delta (Freshman Women)
Delta Sigma Rho-Tau Kappa Alpha (Forensics)
Kappa Delta Pi
Mu Phi Epsilon (Women's Music)
Omicron Delta Epsilon (Economics)
Phi Alpha Theta (History)
Phi Beta Kappa
Pi Kappa Lambda (Music)
Pi Sigma Alpha (Political Science)
Eta Kappa Nu (Electrical Engineering)

Honorary Service Organizations

Chimes (Junior Women)
Mortar Board (Senior Women)
Alpha Phi Omega (National Service Fraternity)
Gaucho Services

Residence Halls Association

Students living in University-owned residence halls are organized into groups which conduct social, recreational and cultural activities for their members. The Residence Halls Association coordinates the efforts of these groups and works with the Associated Students through appropriate committees and boards.

Fraternities and sororities

There are eight national fraternities and eight national sororities at UCSB. Greek chapters offer small-group living, social activities, and opportunities for involvement in academic and community service programs. Formal rush (new membership) activities are held at the beginning of Fall and Spring quarters. For further information, contact the Student Affairs Office.[21]

Community service projects

Students may volunteer their services to schools, mental health programs, prisons, Indian reservations, and senior citizens' homes while at UCSB. The Community Affairs Board of the Associated Students coordinates such student efforts with community needs. If you would like to participate in some form of volunteer work you should contact the Community Affairs Board.[22]

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[20] See inside front cover for address.

[21] See inside front cover for address.

Social and cultural activities

Students will find numerous activities and opportunities for involvement at UCSB. In addition to the programs mentioned above, there is a student newspaper (*The Daily Nexus*), an AM-FM radio station (KCSB), a yearbook (*Islands*), a literary magazine (*Spectrum*), forensics, and dance, music and choral groups.

Athletics and Recreation

Intramurals

UCSB maintains a year-round program of athletic activities to suit the interests and abilities of every student. This program offers more than 70 sports, including waterpolo, badminton, rugby, fencing, soccer, crew, archery, golf, karate, sailing, gymnastics, jousting, football, baseball, tennis, and basketball. Among the more popular coed sports are basketball, volleyball and innertube waterpolo.

Recreation Department

The Recreation Department provides many leisure activities for UCSB students, faculty, staff and local community residents. Departmental offerings include the use of two campus swimming pools, two gyms, a gymnastics area, a weight room, a pottery room, a weaving studio and a photo lab, horseback riding and recreational sailing. Non-credit classes in such activities as banjo, tennis and pottery are offered; various recreational equipment is available for rental. The Recreation Department also assists students to organize and administer clubs and teams which compete on intercollegiate levels.[23]

Intercollegiate athletics

UCSB's intercollegiate athletic program offers 12 varsity sports for men and six for women. Men's teams include cross country, water polo, soccer, basketball, swimming, gymnastics, wrestling, volleyball, track and field, baseball, golf and tennis. Women may participate in tennis, volleyball, swimming, track, gymnastics and basketball. All men's varsity teams compete in the National Collegiate Athletic Association University Division.

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[22] See inside back cover for location of Associated Students.

[23] The Recreation Department publishes a quarterly supplement, *Leisure Review*, which contains listings of intramural, recreational, leisure and intercollegiate activities for each quarter. The *Review* is available on campus at the beginning of each quarter.

Storke Plaza on Market Day, when student crafts are offered for sale.

Ⓔ Registration Regulations

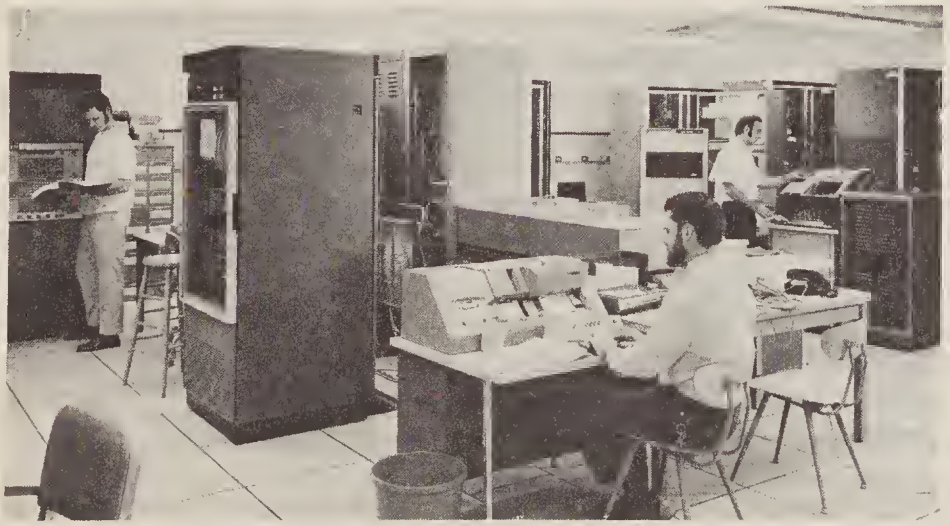
E1 Registration

Every UCSB student must register at the beginning of each quarter. The registration process includes payment of fees, enrollment in courses and the filing with the Registrar of the completed registration forms at a specific time. Complete details of this procedure are contained in the *Schedule of Classes* which is available approximately two months before the beginning of each quarter. This publication is mailed to all new students and can be purchased at the Campus Bookstore in the University Center (UCen).

Students with outstanding financial obligations to the University may not register until these are paid or officially deferred. The Business and Finance Office has authority to make extensions on financial obligations.

Students who are subject to academic disqualification may not register until and unless they are reinstated on academic probation by the dean of their college or school.[1] The dean of the student's college has the right to set conditions for probationary reinstatement of any academically disqualified student.

A graduate student must register each quarter until completion of the degree requirements. Failure to register or to petition for an official leave of absence will constitute presumptive evidence that the student has withdrawn from the Graduate Division.[2] Graduate students who fail to register and who wish to resume their studies after a lapse in graduate status will be required to file reapplication forms and pay a nonrefundable $20 fee. Readmission is not guaranteed.



A busy day in the Computer Systems Laboratory.

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[1] See E7 for information about academic probation and disqualification.

[2] See Ⓙ for more information about the Graduate Division.

Medical evaluation requirement

A new student or a returning student who has not been officially on any UC campus for a year or more is required to submit: 1. A completed Medical History (UCSBSH Form 1A); **2.** A report of a Tuberculin skin test or chest x-ray performed with in the past 12 months.

It is strongly recommended, though not required, that students have a physical examination by a personal physician within one year prior to the first day of classes at UCSB. This is especially important if you plan to participate in athletic activities or to enter the teaching field. UCSBSH Form 1B is available for the purpose of this physical examination. When these medical forms are received at the UCSB Student Health Service,[3] they will be reviewed and if there are any areas needing clarification, the student will be requested to report to the Student Health Service.

E-2 Study Lists

At the beginning of each quarter, students must file with the Registrar an official Study List of the courses which they intend to complete that quarter. The *Schedule of Classes* which may be purchased in the campus bookstore contains instructions for arranging and filing the study list. Unapproved withdrawal[4] from or neglect of a course on the Study List will result in a failing grade. Changes[5] in the official Study List after it has been filed can be made only by petition and no later than the deadlines published in the *Schedule of Classes* for that quarter.

Undergraduate Study List Limits[6]

The average academic schedule for undergraduate students is 15 units per quarter.[7] The minimum full-time program is 12 units. Anyone who is not able to carry at least 12 units per quarter must petition to enroll in a deficit program at the time of pre-enrollment.[8] The maximum units allowable per quarter vary among the colleges. These limits are published in the *Schedule of Classes* and in the college announcements.[9] If you wish to enroll in more than the maximum number of allowable units, you must petition for an excess program at the time of pre-enrollment.

E-3 Absence and withdrawal

Temporary absence during a quarter

Undergraduate students registered at UCSB who have been or will be absent from classes for reasons beyond their control for a brief period of time should notify the Student Affairs Office. Regardless of the excuse for absence, students will be held to completion of all course work according to the demands of each instructor.

If such an absence is late in the term and is prolonged, making it impossible to complete the course work on time, students may ask their instructors to assign an Incomplete (I) grade.[10] A student who is unable to make this request personally may ask the Dean of Student Affairs to notify each instructor of the circumstances of the absence. If the instructor agrees that an extension of time for completion of the course is justified, an Incomplete grade will be assigned.

Withdrawal from a course

To withdraw from a course after the established deadline,[11] undergraduates must petition and obtain the approval of the dean of their college. The dean may cancel the student's enrollment in the course or may excuse the student from attending the course and direct the Registrar to enter a grade of F or NP,[12] as appropriate, on the student's record. The dean may also stipulate that future enrollment in the same course be subject to the dean's approval.

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[3] See D-3 for further information about Student Health.

[4] See E-3 for further explanation.

[5] These changes include drops, additions, or alterations in grading options.

[6] Information about study list limits for graduate students is contained in the *Graduate Division Announcement* which may be obtained in the Graduate Division office. See inside front cover for address.

[7] See E-6 for information about units of credit.

[8] Further information about pre-enrollment and petitioning can be found in the *Schedule of Classes*.

[9] See the list of Publications in this catalog.

[10] See E-6 for further information about incomplete grades.

[11] See the *Schedule of Classes* for quarterly deadlines.

Complete withdrawal

A registered student withdraws from the University during a quarter without completing the quarter's work must obtain from the Registrar's Office a Petition for Complete Withdrawal. If the instructions on the petition are fulfilled and the approval of the college dean is secured, the student's registration will be cancelled without penalty.

A student who receives permission to withdraw completely during the early weeks of a quarter may be entitled to a partial refund of fees for that quarter. The refund schedule is contained in the *Schedule of Classes*.

Upon request, the Dean of Student Affairs will process a Petition for Complete Withdrawal for a student who cannot do so personally. If the dean of the student's college approves the petition, the student's registration will be canceled without penalty.

Students who discontinue work during a quarter without a formal withdrawal will receive F, NP, or U grades, as appropriate, for all courses in which they are enrolled for that quarter. Such students' future registration privileges may be curtailed or revoked, and they will be ineligible for any refund of fees in the case of unauthorized withdrawal.

Students are advised to seek counsel before withdrawing and to consider the full implications of this action. After withdrawal and before future registration, undergraduates must apply for and receive permission to be readmitted while graduate students must apply for admission as noted in the *Graduate Division Announcement*.[13]

Lapse of status

Lapse of status is the automatically enforced withdrawal of a student from the University. A student's status may be lapsed: (a) for failure to file the registration packet within the prescribed time limit;[14] (b) for failure to settle financial obligations when due, or to make satisfactory arrangements with the Cashier if payment cannot be made;[15] (c) for failure to satisfy the Medical Evaluation Requirement;[16] (d) for failure to respond to official University notices. Students who have had their status lapsed are required to pay a pro-rated portion of all assessed fees up to the date of such lapse in accordance with the fee refund schedule published in the *Schedule of Classes*.

Leaves of absence

Any undergraduate student may be absent from UCSB for one or more quarters without petition at the conclusion of any quarter.[17] Readmission is generally approved for students who were on regular academic status when they left the University. Undergraduates must apply for readmission (see below) in order to register again.

Students who were on reinstatement-probation or who were subject to academic disqualification when they left the University will not be readmitted unless they first have been reinstated by the dean of their college. Each dean may establish conditions of reinstatement for such students.

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[12] See E6 for an explanation of the grading system.

[13] See below for readmission information, and E7 for reinstatement information.

[14] *Schedule of Classes* contains information about quarterly deadlines.

[15] See C2

[16] See E1

[17] Petitioning is required only when an undergraduate withdraws *during* a quarter, not at the conclusion of a quarter. See Complete Withdrawal section above. Please see the *Graduate Division Announcement* for the regulations governing leaves of absence for graduate students.

Readmission

Undergraduate students who wish to register at UCSB after having been absent for two or more quarters[18] or after withdrawing during their final quarter must file an application for readmission with the Registrar by the deadlines noted in the Calendar in this catalog. Official transcripts of all work attempted elsewhere in the interim must be submitted to the Registrar.

E4 Additional enrollment opportunities for undergraduates

Concurrent enrollment

Students who wish to enroll simultaneously in undergraduate courses at UCSB and at another college-level institution must obtain prior approval of the dean of their college.[19] Simultaneous registration in two colleges or schools at UCSB (such as Engineering and Letters and Science) also is subject to the approval of the deans of the schools or colleges involved.

Enrollment in extension courses

An undergraduate student wishing to complete courses through University Extension[20] is required to obtain the prior approval of the dean. Petitions are available in the college office. Extension courses are not included in determining grade-point averages at the University of California.

Some UC Extension courses, as well as transferable extension courses from other universities, may be counted toward graduation. Such UC Extension courses are those in the 1-199 series prefixed by X, XB, XD, SL, SR, XSB, and XSF. UC Extension courses in the X300 and X400 series will not be accepted for graduation credit unless the dean of the student's college or school approves. Since approval is rarely given, students should not expect to receive degree credit for X300 and X400 courses.

E5 Examinations

Final examinations

Final examinations are required in all courses except those specially identified in the *Schedule of Classes*. The dates and times of all finals are official as published in the *Schedule of Classes*, and no instructor is authorized to change these times. Students are responsible for arranging their programs so that their final examinations will not conflict.

Normally, examinations will be written, and a maximum time period for their completion will be announced in advance. No student will be permitted to exceed this maximum. The maximum time for a final in a non-laboratory course is three hours. Individual exemptions from finals are not permitted except in the case of comprehensive examinations.[21]

Credit by examination

A student registered in a regular quarter[22] may petition to earn credit by examination during that quarter in an established course or in a subject appropriate for inclusion in the University curriculum. All petitions for credit by examination must be approved by the dean of the student's college in advance of the examination date. Ordinarily, credit by examination is limited to a total of 12 units.

Unit and grade point credit for courses taken by examination will be recorded on the student's official transcript and will be computed in the cumulative University of California grade point average provided that the examination was taken on the letter grade basis. Students who wish to take credit by examination on a *Passed-Not Passed* basis may do so only if they are eligible to take courses on that basis during that quarter. Since failure to pass the examination will be recorded as an F or NP, whichever is appropriate, the student is encouraged to prepare fully for the examination before attempting it.

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[18] For this purpose, the Summer Session is counted as a quarter.

[19] Further information about such programs may be obtained from the college office.

[20] See A7 for more information about University Extension. Graduate students should consult the *Graduate Division Announcement* for further information.

[21] See heading of same below.

[22] This includes Fall, Winter and Spring Quarters but not Summer Sessions.

Credit by examination will not be approved: 1) For the purpose of repeating a course; **2**) For courses in subjects in which the student has completed more advanced work; **3**) For basic[24] courses in a student's native language, if other than English.

Further information on applying for credit by examination may be obtained from the college or school offices.

Comprehensive examinations

At the end of a quarter in which a student expects to graduate, the major department may 1.) examine the student's competency in the major field; 2.) exempt the student from final examinations in courses offered by the department during that quarter, and 3.) with the approval of the Committee on the Undergraduate Courses, assign a credit value to such general examination.

E6 Units and grading systems

Units of credit

Credit for academic work at UCSB is evaluated as units. The value of a course is determined at the rate of one unit for three hours of student work per week each quarter. The credit value assigned to a course is determined by the number of class meetings per week, and by the student's class preparation time.

Class status

Undergraduate classification is determined by the number of units completed.

Classification	**Units Required**
Freshman	0-40 units completed (including Subject A[25])
Sophomore	40.5-83.5 units completed (including Subject A)
Junior	84.0-134.5 units completed (excluding Subject A)
Senior	135.0 or more units completed (excluding Subject A)

Grades

The following grades are used to report on the work of UCSB students:[26]

Undergraduate Courses		**Graduate Courses**	
A	(excellent)	A	(excellent)
B	(good)	B	(good)
C	(adequate)	C	(adequate)
D	(barely passing)	D	(poor)
F	(not passing)	F	(not passing)
P	(passed)	S	(satisfactory)[27]
NP	(not passed)	U	(unsatisfactory)[27]
I	(incomplete)	I	(incomplete)
IP	(in progress)	IP	(in progress)

The grades A, B, C and D may be modified by plus (+) or minus (−) suffixes. Grade-points per unit are assigned by the Registrar as follows: A+ = 4.3; A = 4.0; A− = 3.7; B+ = 3.3; B = 3.0; B− =

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[24] See language department entries in L for specific credit limitations.

[25] See F2 for explanation of Subject A.

[26] See I3 for special grading system in the College of Creative Studies.

[27] Further explanation of these grades (S and U) can be found in J3.

2.7; C+ = 2.3; C = 2.0; C− = 1.7; D+ = 1.3; D = 1.0; D− = 0.7; and F, I, IP, P, NP, S, and U = 0. Unit credit, but not grade-point credit, is assigned for P and S grades.

Repetition of courses

The Committee on Courses has authorized that certain undergraduate courses may be repeated for credit. [28] Repetition of unauthorized courses is subject to the following conditions:[29]

A student may repeat only those courses in which a grade of D+, D, D−, F or NP was awarded. Such courses may be repeated for letter or Passed/Not Passed grades if the courses are so offered and if the student is eligible for that option. In no case, however, shall an NP grade replace an earlier letter grade in the computation of the grade-point average. A course in which an NP has been received may be repeated on a letter grade basis if so offered.

Repetition of a course more than once requires the prior approval of the dean of the student's college. Degree credit for a course will be given only once, but the grade assigned at each enrollment will be permanently recorded on the student's transcript.

In computing the grade-point average of an undergraduate who repeats courses in which grades of D+, D, D− or F was received, only the most recently earned grade and grade points in each course will be used for the first 16 units repeated.[30] In the case of additional repetitions, both initial and repeated grades will be averaged together in the computation of the grade-point average.

It is the student's responsibility to indicate on the study list[31] the repetition of a course.

Incomplete grades

The grade I (Incomplete) may be assigned when a student's work is of passing quality, but is incomplete. The student is entitled to have the grade of Incomplete replaced by a passing grade, as determined by the instructor concerned, and to receive unit credit and appropriate grade points upon satisfactory completion of the work of the course. If the instructor is unavailable, the chairman of the department in which the course was offered is authorized to supervise the completion of the work and to make the appropriate grade change.

The Incomplete grade must be removed, however, either by the end of the next full quarter in which the student is registered *and* the course is offered, *or* by the end of one calendar year from the receipt of the I grade, whichever comes first. The dean of the appropriate college or school has authority to extend the deadline for completion of I grades in the event of unusual circumstances. If the work is not completed by the deadline or its authorized extension, the Incomplete will be changed automatically to an F or NP, as appropriate. A student may not repeat a course in which an Incomplete was assigned and therefore may not register for the course a second time in order to remove a grade of I.

Incomplete grades will *not* be included in the computation of the student's grade-point average at the end of the quarter. However, at the time of graduation, the Registrar will include any remaining I grades (except those in courses taken on a Passed/Not Passed Basis) in the computation of the grade-point average in order to determine whether or not the student has met the University's minimum grade-point average requirements.[32] An incomplete grade, in these computations, has the same effect as a grade of F.

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[28] These courses are indicated in the course listings in L

[29] These regulations govern only UC courses and their repetition. See *Letters and Science Announcement* for additional information.

[30] Courses taken at other college or universities or through UC Extension are not included in grade-point average computations.

[31] See E 2 for information about study lists.

[32] See E 6 for a description of these requirements.

In-progress grades

The grade IP (In Progress) may be assigned provisionally in each but the last term of special courses extending over more than one term.[33] In the last term, the letter grade assigned by the instructor replaces the provisional IP grades for all portions of the course. In the event the full sequence of the course is not completed in the last quarter, the grade IP will be replaced by the grade I and further changes of that grade will be subject to the conditions covering Incomplete grades. IP designations are not included in the computation of grade-point averages.

Passed/not passed grades

Passed/Not Passed (P/NP) grades are not included in the computation of University grade-point averages. Courses graded P, however, are acceptable for unit and appropriate degree credit. P grades will be assigned only for course work equivalent to a C or better on the letter grade basis. NP grades will be assigned for work equivalent to a C− or below. No credit is given for courses graded NP.

Students may elect the P/NP grading option provided that they meet the following conditions.

1. They are in good academic standing (i.e., not on academic probation[34]).

2. The course is open to all qualified students on this basis and is so advertised in the *Schedule of Classes* or its supplement.

3. The course is not required or accepted for the student's major[35] (see below for an exception).

4. They elect this option on their study list at the time of registration or thereafter by petition not later than the end of the seventh week of classes.[36]

5. At the time of graduation, they will have at least two-thirds of the units earned in residence at UCSB on the letter grade basis[37].

6. They have not been restricted or prohibited from the use of the P/NP option due to an excessive number of NP grades earned. (Students with more than 8 units of NP grades in one quarter or with more than 20[38] units of NP grades in all terms of University enrollment combined may be so restricted.)

With the prior approval of appropriate faculty committees, a department may specify that certain "major" courses may be taken P/NP.[39]

Students who take "major" courses in excess of minimum major requirements may elect the P/NP option for those courses.

Undergraduate courses may be offered exclusively on a P/NP basis with the prior approval of the appropriate faculty committees. Such courses are specially identified in the *Schedule of Classes.* Students on academic probation, as well as those in good standing, may take such courses without special approval.

Grade changes

All grades except I and IP are final when submitted to the Registrar's Office by the instructor in the end-of-term course report. Thereafter, an instructor may report a correction of a grade at any time in the case of a clerical or procedural error.

In the quarter following that in which the original grade was received, an instructor may also change a grade if the basis for the change is found in work previously accomplished in the course as a part of the student's regular participation in class activity. However, such changes must not create inequities to others whose grades are unaltered.[40]

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[33] These courses are specially identified in the *Schedule of Classes.*

[34] However, students on probation may enroll in courses offered exclusively on a P/NP basis. See Ⓔ7 for definition of "academic probation."

[35] Courses in the major, lower or upper division, in or outside of the major department, must be taken for a letter grade.

[36] Students are responsible for determining if they are qualified for enrollment in courses on a P/NP basis, according to the requirements stated here.

[37] There is no limit on the number of courses which may be taken P/NP during a single quarter.

[38] In the case of repeated courses in which the initial grade was NP, the original NP will not be included in this 20 unit total.

[39] If such special approval has been given, these courses are identified in the major requirement entries in Ⓛ

Transcript of record

A record of each student's academic work is prepared and retained permanently by the Registrar's Office. Students should check their quarterly grade report and immediately inform the Registrar of any discrepancies. After a period of 10 years from initial registration, the record will be accepted as accurate and secondary records such as petitions and program changes will be destroyed.

Copies of the official transcript may be obtained from the Registrar's Office for $2 for the first copy and $1 for additional copies requested at the same time. Students with financial obligations to the University will have transcript requests withheld until such obligations have been cleared or extended officially. All transcript requests must be accompanied by appropriate cash amounts.

E7 Academic eligibility[41]

Academic probation

Undergraduate students in the Colleges of Engineering and Letters and Science normally are subject to academic probation if their cumulative grade-point average in the University of California falls below 2.0 (C average) at the end of any quarter. While on academic probation, students are under the supervision of the dean of the college.[42] Students on academic probation will be returned to regular academic status if they raise their cumulative average to 2.0 or above by the end of their second quarter on academic probation.[43]

Academic disqualification

Undergraduate students in the Colleges of Engineering and Letters and Science[44] are subject to disqualification from further registration at UCSB: a) if at the end of any quarter their grade-point average for that quarter is less than 1.5, or **b**) if while on academic probation, their grade-point average for any quarter falls below 2.0, or **c**) if after two consecutive quarters on academic probation they have not raised their cumulative UC grade-point average to 2.0 or better.

Students who are subject to academic disqualification are not eligible to register again at UCSB until and unless they are reinstated on probation by the dean of their college.

Reinstatement

Students subject to academic disqualification may appeal to the dean of their college for reinstatement on probationary status. The dean will decide if a student may be reinstated and may set conditions for reinstatement.[44] Reinstated students may register at UCSB under the conditions set by their dean and subject to the dean's supervision until they have regained regular academic status.

In order to transfer either from one UC campus to another or from one school or college to another on the same campus, students who are on academic probation or subject to academic disqualification must obtain the approval of the dean of the college or school to which transfer is requested. Upon completion of the transfer, the student is subject to the supervision of the dean of that college or school.

Honors at graduation

Students who have completed their majors with distinction and who have general records satisfactory to the Committee on Undergraduate Scholarships, Honors and Prizes are recommended for honors at graduation.

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[40] No final grade, except I, may be revised by reexamination and no letter grade may be changed to P/NP or vice versa.

[41] See I for information about academic probation and disqualification in the College of Creative Studies.

[42] See *Schedule of Classes* for special study list limits for students on academic probation. See also E7 for grading option limitations for such students.

[43] Graduate students must maintain a minimum 3.0 G.P.A.

[44] See also the *Letters and Science Announcement* for additional information concerning the implementation of this regulation.

Honors at Graduation are based primarily on a minimum grade-point average at the University of California of 3.25 for Honors, 3.50 for High Honors and 3.75 for Highest Honors. A minimum of 90 units (including Summer Session units but excluding UC Extension units) earned at the University of California will be required for consideration for Honors at Graduation.

E8 Student conduct and responsibility

Student conduct

A student enrolling in the University assumes an obligation to act in a manner compatible with the University's function as an educational institution. Regulations concerning student conduct, organizations and use of University facilities and related matters are contained in statements of University policies and campus regulations which are available at the Student Affairs Office and various other campus offices.[45]

Alleged violations of campus or University regulations will be investigated by appropriate officials and may be referred to a hearing before a hearing officer or a committee appointed by the Chancellor.

The Judicial Council of the Associated Students[46] may recommend procedures and policies for undergraduate student conduct. Living groups, such as fraternities, sororities and residence halls, may have self-governing bodies to establish and enforce residence regulations.

The University has eight degrees of discipline: warning, censure, disciplinary probation, restitution, interim suspension, suspension, dismissal and expulsion. The University reserves the right to make final determination in any case of student discipline. The effect of these measures upon the welfare and education of the individual involved, as well as upon the welfare of the student body as a whole, is considered before any such sanctions are taken. All sanctions are administered by virtue of authority vested in or delegated by the Chancellor.

Student responsibility

Each student is responsible for compliance with regulations printed in this catalog and in the *Schedule of Classes*, with all official notices published in the campus newspaper, with notices on official bulletin boards, and with all regulations of the University.

Notice of change of name and/or address must be reported to the Registrar's Office immediately.

A student may not receive grades, transcripts of records, teaching credentials or diplomas until all University obligations have been met. A student cannot register at the beginning of any new quarter until past obligations have been satisfied or officially extended. Failure to comply with University obligations may result in lapse of status.[47]

It is the student's responsibility to secure the consent of the instructor before enrolling in a course having prerequisites which the student has not completed. While at UCSB, a student may be taking courses which may involve a low level of psychological, sociological, or physical risk as part of normal classroom routine. The instructor is responsible for apprising students of such risks. Nevertheless, each student must satisfy the requirements stated throughout this catalog in order to obtain a degree.

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[45] These are set forth in the booklet *University of California Policies to Students and Student Organizations, Use of University Facilities, and Non-Discrimination.*

[46] See D7 for more information about Associated Students.

[47] See E3 for explanation of lapse of status.

Student work

All material of whatever nature submitted by a student in satisfaction of all or any portion of a course requirement is the property of the University and is not subject to any claim on the part of the student who has submitted it.

Any material produced by a student independently of any course requirement must be removed by the student from the university premises no later than the last day of the quarter in which the material was produced. The University assumes no obligation to hold or safeguard such material and the risk of possible destruction, loss, or other disposition is assumed solely by the student.

Authority of instructors

All students must register and have their enrollment approved by the appropriate study list[48] authority before entering any organized instructional activity at UCSB. Each instructor has the authority to determine whether or not a student is sufficiently prepared to enter upon or to continue in the study of that instructor's subject.

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[48] See E2 for an explanation of study lists.

Ⓕ University Bachelor’s Degree Requirements

F1 Introduction

To be eligible for a bachelor’s degree from the University of California, Santa Barbara, students must meet the general University requirements given below and the appropriate college and major requirements described in the later sections of this catalog and in the announcements of the colleges. They must also comply with University regulations governing registration, grade-point average, examinations and student conduct.[1] Further information about these requirements is available elsewhere in this catalog and from the Registrar’s Office, the college dean’s office and the Dean of Students Office as appropriate.

F-2 Subject A - English composition

Every undergraduate[2] must demonstrate an acceptable level of ability in English composition. Satisfaction of the Subject A requirement is determined by the Office of Admissions at the time of admission to the University. **This requirement may be met in one of the three following ways: 1.** Achieving a score of 600 or higher on the College Entrance Examination Board (CEEB) Achievement Test[3] in English Composition. **2.** Achieving a grade of 3 or higher on the CEEB Advanced Placement Examination in English.[4] Entering the University (at the freshman or advanced standing level) with transcripts showing the completion of an acceptable 3 semester- or 4 quarter-unit college level course in English composition with a grade of C or better. If the course is equivalent to English 1A,[5] transfer credit for that course will be given.

Advanced standing (i.e. transfer) students who enter UCSB without having met the Subject A requirement will required to take the Subject A Writing Sample[6] at the beginning of their first quarter of attendance at the University. Freshmen who score from 450 to 599 on the CEEB English Achievement Test above (item 1) are also eligible to take this test. Students who pass the Subject A Writing Sample will have met the requirement.

Students not meeting this requirement in one of the ways described above must complete the non-credit course in Subject A during their first quarter in residence.[7] Those who do not pass the course will be required to repeat it each quarter of residence until they receive a satisfactory grade. A fee of $45 is charged for the course, and this charge will be repeated each time the course is taken. The fee must be paid before the Registration packet is filed.

A continuing student who fails the Subject A course at the University and then completes the equivalent of English 1-A with a grade of C or better at another institution either during the summer or while not enrolled in the University will receive transfer credit for English 1-A and will have met the Subject A requirement.

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[1] A statement about student conduct may be found in the Fall *Schedule of Classes*, in addition to the information contained in E8.

[2] See following information and B11 for information pertinent to foreign students.

[3] See B2 for more information about CEEB tests.

[4] See G3 and H3.

[5] See Ⓛ English Department, for course description.

[6] See the *Schedule of Classes* for examination time and location.

[7] See Ⓛ, Subject A, for course description.

Undergraduates who pass this exam must meet the Subject A requirement as described above. Undergraduates who do not pass this exam will be required to complete the appropriate portions of the English as a Second Language 1A-B-C[9] course series. Their performance on the final examination in the ESL 1C course will determine their status with regard to the Subject A requirement.

[9] See Ⓛ, Subject A, for course description.

Foreign students

All non-immigrant foreign students, unless exempted[8], must take the English Language Placement Examination for foreign students.

[8] B 11 contains information about possible exemptions.

F 3 American history and institutions

The American History and Institutions requirement is based on the principle that American students enrolled at an American university should have some knowledge of the history and government of their country. The following courses contribute to that objective either by breadth of coverage of American history and institutions or by depth of concern with significant aspects and periods. **This requirement is satisfied by completion of any two courses chosen from the following list.** (''Course'' refers to a one-quarter offering, e.g., History 17A):

- **Anthropology** 131
- **Art** 151D, 161A-B
- **Asian American Studies** 100A-B, 110
- **Black Studies** 1A, 101, 103, 110, 124, 176 (*or* Political Science 176)
- **Chicano Studies** 1A-B-C, 101A-B (*or* History 101A-B), 144 (*or* Sociology 144), 174 (*or* Political Science 174), 188 A-B-C
- **Economics** 113A-B
- **English** 114, 121, 128, 129, 130, 133A-B-C-D, 135, 136, 137A-B, 138A-B, 139
- **Environmental Studies** 3, 4
- **History** 17A-B, 72, 74, 101A-B (*or* Chicano Studies 101A-B), 105, 108A-B, 159A-B, 160A-B, 161, 162A-B, 163C-D-E-G, 164A-C, 165, 166A-B, 167A-B-C, 169A-B, 169M, 170J-K, 171A-B, 172A-B, 172AL-BL, 173A-B-C, 173S, 174A-B-C-D, 175A-B-C, 176A-B, 177, 178A-B-M, 179, 179Q
- **Law and Society** 100
- **Military Science** 1A-B-C, 2A-B-C

Note: 4 units are needed in Military Science courses to equal one acceptable course for this requirement.

- **Philosophy** 119
- **Political Science** 5, 10, 12, 15, 100, 113, 115, 118, 127, 152, 153, 155, 157, 158, 165, 166, 167, 172, 173, 174 (*or* Chicano Studies 174), 176 (*or* Black Studies 176), 180, 185
- **Religious Studies** 151A-B, 152
- **Sociology** 45, 118, 128, 132, 144 (*or* Chicano Studies 144), 155A
- **Speech** 132A-B

When a course is cross-listed in two different departments, e.g., B.S. 176 and P.S. 176, it will only count as one course toward completion of this requirement.

Equivalent courses (as determined by the Admissions Office) taken at other accredited colleges or universities, in University Extension or in Summer Session[10] are acceptable.

Other methods of satisfying this requirement include:

1. Passing a non-credit examination in American history or American institutions. These examinations are offered in the Departments of History and Political Science[11] during the first week of each quarter.

2. Achieving a score of three or higher on the CEEB Advanced Placement Examination in American History.[12]

3. Earning 10 units[13] of credit through specific examinations in American Literature, American History, or American Government completed in the College Level Examination Program.[14] (If 5 units of such credit are earned, this will count as only one of the two courses required.)

Foreign students on a non-immigrant (F-1) visa may petition for a waiver of this requirement through the Foreign Student Adviser[15].

F4 Unit requirements

A total of 180 quarter units is required for graduation. These must be distributed according to the minimum requirements set forth by the faculty of your college as explained in the following sections and in the announcements of the colleges.[16]

The acceptability of transfer courses for unit credit is determined by the Office of Admissions. The acceptability of such courses toward specific requirements is determined by the college deans and department chairmen as appropriate.

F5 Academic residence requirements

Candidates for a bachelor's degree must be registered in the University for at least three terms[17] to fulfill the University's Academic Residence requirement. At least 35 of the final 45 units must be taken in the college or school in which the degree is to be awarded. Students in the College of Letters and Science must complete (in residence in the College) at least 27 upper division units, of which at least 18 must be in the upper division major.[18] No more than 18 of the final 35 units may be completed in Summer

[10] A7 has more information about University Extension. Write to the Summer Sessions Office for more information about Summer Session.

[11] Consult specific department for further information.

[12] See G3 and H3 for additional information.

[13] Considered equivalent to the two required courses.

[14] See B3.

[15] See D2 for further information about counseling services for foreign students.

[16] Ⓖ contains some specific unit requirements and limitations for students in the College of Letters and Science.

[17] The three-term requirement can be satisfied at any UC campus. A term is a regular quarter in which a student enrolls in six or more units of resident (on-campus) courses. Each UC Summer Session in which at least two units are completed is the equivalent of half a term's residence.

[18] In the case of double majors, at least 18 must be in each major while in residence.

Session courses at UCSB.

Students in the Education Abroad Program[19] are responsible for completion of all of the above Academic Residence requirements with one modification — with prior approval, EAP students may satisfy the 35 unit residence requirement by earning 35 or their final 90 units (instead of 35 of the final 45) at UCSB in the school or college in which the degree is to be taken.

Students who participate in the Education Abroad Program in their senior year may graduate without returning to UCSB, provided that all degree requirements have been completed and provided they have the prior permission of their major department to do so. Seniors who have not completed all degree requirements by the end of their year abroad must return to UCSB and complete a minimum of 12 units on campus for the purpose of the residence requirement while they are completing their final degree requirements.

F6 Grade-point requirement

At the time of graduation, students in the College of Letters and Science and Engineering must have at least a 2.0 (C) grade-point average 1) in all courses undertaken at the University, except those graded Passed/Not Passed; 2) in all UC courses required and acceptable for[20] the overall major program (both upper and lower division), and 3) in all UC upper division courses required in and acceptable for[20] the major progam. Courses graded Incomplete, except those taken on a Passed/Not Passed basis, will be included (as F's) in final grade-point computations.[20] At the time of graduation, students in the College of Creative Studies must have a grade-point average of at least 2.0 (C) in UC courses taken for letter grades.

F7 Major requirements

Students may elect any approved major program, but major departments and/or committees may require auditions or placement exams to determine whether students are qualified for specific courses, or to enter or continue in a major.

Students must declare a major by the beginning of their junior year. All petitions to declare or change a major require the prior approval of the prospective major department or committee chairman and the dean of the college.

In order to be eligible for graduation, all undergraduates must declare and complete, with the required grade-point averages,[21] the requirements of a departmental or interdepartmental major available to them in their college.[22]

Students who fail to attain a grade-point average of at least a 2.0 in work in the major may, at the option of the major department or committee, be denied the privilege of continuing in that major.

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[19] See A7 and L for information about EAP.

[20] Courses appropriate for satisfaction of major requirements must be utilized in the computation of the grade-point average even if they are in excess of the minimum requirements of the major program.

[21] See F6.

[22] See A4 for complete listing of majors available, and G2 for a description of the individual major option. See F5 for residence requirement in the major.

G College of Letters and Science

G1 Introduction

Aims

The College of Letters and Science is UCSB's largest undergraduate college with an enrollment of over 10,000 students in 34 departments. Its aim is to enable students to fulfill their potentialities and deal effectively with their environment.

The College's General Education Program is grounded in this concept and designed to introduce each student to a broad spectrum of human endeavor and accomplishment. Through completion of the College's requirements as outlined in this section, students will have the opportunity to gain an enhanced understanding of the English language, an introduction to humanities and the fine arts, a comprehension of the basic principles of history and the social sciences and an acquaintance with the natural sciences and mathematics.

Degrees offered

Three bachelors degrees are offered by the College of Letters and Science: the Bachelor of Arts, the Bachelor of Science and the Bachelor of Music.[1]

Letters and Science Announcement

The College publishes the *Letters and Science Announcement* each May. It contains detailed information for students in the College, including a description of degree requirements, and of the special options available to students as well as general academic information and advice. New students will receive a copy of the *Announcement*, including a special supplement designed for them, when they are admitted to UCSB.

Requests for a copy of this publication, or any further information on the College, should be addressed to the College.[2]

G2 Special programs and options

Scholars Program

The Scholars Program was established for students in the College of Letters and Science with high potential and strong motivation. It offers the opportunity for a more individualized education through close association with the faculty, counselors, and fellow students. Students are invited to participate in the Program on the basis of criteria[3] established by a Scholars Council of eight faculty members and the Program Director. Within the larger structure of the University, the Program offers Scholars a small college atmosphere, counseling services, special library privileges, encouragement to undertake special projects in their fields of interest, and a Scholar's Lounge for social gatherings and intellectual pursuits.

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[1] See A4 for a chart of all majors and degrees.

[2] See inside front cover for address.

[3] These include aptitude and personality tests, interviews with counselors, and recommendations from faculty members.

Undeclared major

Students may register as undeclared majors during their freshman and sophomore years, but must declare a major by the beginning of their junior year.

Individual major

Qualified students also have the option of designing an individual major which requires the approval of the Dean and the Executive Committee of the College. Details concerning the individual major option are available in the College Office.

Preprofessional programs

While in the College of Letters and Science, students can prepare for admission to professional programs offered at other colleges or universities. College advisers and faculty members serve as preprofessional advisers in the fields of Architecture, Business/Management, Dentistry, Education, Forestry, Journalism/Mass Communication, Law, Library Science, Medical Technology, Medicine, Nursing, Physical Therapy, Social Work, Special Education, Speech Therapy, and Veterinary Medicine.

Further information, including recommended or required courses for many of these fields, can be found in the *Letters and Science Announcement* or in the College Office.

Ⓖ3 College requirements

General Education requirements

Students in the College of Letters and Science must complete certain General Education requirements[4] appropriate to their degree, as described in the following section, in order to qualify for graduation. Students admitted during the 1975-76 academic year are responsible for the appropriate requirements as described in this catalog. These requirements may be satisfied by courses completed on this campus or by equivalent courses completed at another accredited collegiate institution or by means of CEEB Advanced Placement credit.[5]

Transfer students

Prospective transfer students should use the appropriate list of required courses and their descriptions in Ⓛ as a guide for selecting equivalent courses at other schools. California community college counselors have information on equivalent transferable courses. New transfer students may petititon to follow the General Education program in effect at UCSB at the time they were first term freshmen, or in effect three years previous to their first enrollment here, whichever is more recent. Questions concerning the acceptability of transfer courses for these requirements should be directed to the College office.

General Education program/ Bachelor of Arts degree

The General Education (GE) program for the Bachelor of Arts degree covers five areas (A,B,C,D,E) below. The General Education courses must be selected in accordance with the seven general principles immediately following the list of GE areas.

Area A - English reading and composition

Required: English 1A-1B (or two equivalent semester or quarter courses of at least 3 semester or 4 quarter units each).

Note: English 1A-1B must be completed in successive quarters (except when deferred for one quarter by the English Department) immediately upon entrance to the University if the Subject A re-

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[4] See Ⓕ for University degree requirements and Ⓛ for departmental major requirements.

[5] See chart later in this same section.

quirement has been completed. (See F2). Students (including transfers) who have not fulfilled the Subject A requirement must complete it during their first quarter in residence and immediately upon its completion, enter and complete English 1A and 1B in successive quarters.

Area B - Natural science and mathematics

Required: Three courses from the list below, including at least two from Area B-1. (Two equivalent semester courses of three or more units each from B1 will fulfill this requirement entirely.)

B-1:
Astronomy
Biology (except 123, 155)
Botany
Chemistry (except 20, 101)
Geology (except 106)
Mathematics (except 1, 2, 100ABC)
Natural Science 1ABC
Physics (except 102)
Zoology

B-2:
Anthropology 5, 105, 121, 150, 151, 152AB
Chemical Engineering 10, 120A, 130A, D, 150A, 158A, 160
Chemistry 20, 101
Electrical Engineering/Computer Science 1, 5, 105AB, 130ABC, 150, 151, 152AB, 154, 158ABC, 165ABC, 173
Engineering 1
Environmental Studies[6] 1, 2, 5, 6, 101, 102, 105, 106, 123, 155, 175
Ergonomics 42, 105, 106, 152, 156, 182
Geography 3, 110, 111, 112, 113, 114, 165
Mechanical Engineering 102, 110, 152AB, 157, 170ABC
Nuclear Engineering 10, 111, 121, 122
Psychology 106, 113ABCL, 132, 133AB

Cross-Listed Courses[6]:
Biology/Environmental Studies 123, 155
Chemistry/Environmental Studies 101
Geology/Environmental Studies 106
Physics/Environmental Studies 102

Area C - Fine Arts

Required: Two courses from one or more of the following:
Art[7] 1, 6ABCDEF, 7A, 150-184
Black Studies[7], 114A, 140
Chicano Studies 188ABC
Classics 180
Dance 45, 145AB, 150

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[6] See also cross-listed courses below.

[7] See also cross-listed courses below.

Dramatic Art 5, 20, 46, 60, 102, 103, 105ABC, 106, 117, 120, 146, 148, 160ABCDEF, 162, 163
Film Studies[7] 101ABC, 115, 128, 133, 151AB, 152, 155, 156, 158, 159, 170, 186, 190, 191
Music 15, 16, 113-119B

Other film courses:
French[7] 178XY, 181X, 184XYZ, 187, 187XY, 188X, 189YZ
Italian 142X, 180XYZ, 181X, 188XY
Scandinavian 140

Cross-Listed Courses[7]:
Black Studies/Music 114A
Colloquium/Film Studies 133
Environmental Studies/Art 164G
French/Sociology 181X
German/Art 161F

Area D - Humanities

Required: Three courses from one or more of the following. Two equivalent semester courses of at least three semester units each will fulfill this requirement entirely. *Note: Levels 1, 2 and 3 in a foreign language (or the equivalent) will not apply to this requirement.*

Arabic
Black Studies 38, 48, 100, 113, 115, 124, 128, 129, 130AB, 132, 133ABC, 134
Chicano Studies 12, 120, 121, 181, 190
Chinese
Classics (except 180)
Comparative Literature
English (except 1AB, 106G)
Environmental Studies[8] 141
French[8] (except those in Area C above)
German[8] (except 161F)
Greek
Hebrew
Interdisciplinary Studies 101
Italian (except those in Area C above)
Japanese
Latin
Linguistics
Philosophy
Portuguese
Religious Studies (except 156)
Russian
Scandinavian (except 140)
Semitic Languages
Spanish
Speech 1, 10, 11, 35, 40, 41, 47, 52, 112, 117, 118, 129, 131, 133AB, 134, 136, 137, 138, 140, 141, 142, 146, 149AB, 150, 180

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[7] See also cross-listed courses below.

[8] See also cross-listed courses below.

Swedish

Cross-Listed Courses[8]:

English/Environmental Studies 141
History/German 192
Music/German 187
Music/French 188
Philosophy/Religious Studies 114

Area E - History, Social Sciences, Psychology

Required: Three courses from the list below, including at least one from Area E-1. Two equivalent semester courses of three or more units each will fulfill this requirement entirely, provided at least one is from Area E-1.

E-1:

Anthropology (except 117 and those in Area B-2)
Economics (except accounting courses)
Geography (except 3, 110, 111, 112, 113, 114, 115AB, 118AB, 121, 165, 170, 171)
History (except 101ABQ, 173T, 192)
Political Science[9] (except 174, 176)
Psychology (except those in Area B-2)
Sociology[9] (except 115, 121, 144, 181X, 192)

Cross-Listed Courses[9]:

Environmental Studies/Political Science 190C
Political Science/Sociology 118
Religious Studies/Sociology 156

E-2:

Asian American Studies 100AB, 110
Black Studies[10] 1ABC, 101, 102, 103, 104, 105, 107, 110, 119, 120, 150, 160ABC, 176

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[9] See also cross-listed courses, E1.

[10] See also cross-listed courses, E2.

Chicano Studies[10] 1ABC, 101ABQ, 105, 115, 140, 144, 170AB, 174
Environmental Studies[10] 3, 4, 121, 125, 126, 129, 135, 165AB, 173T
Ergonomics 112, 117AB, 118
Law and Society[10] 100, 117, 190AB
Mechanical Engineering 180
Speech 132AB, 158, 159, 162, 185
Cross-Listed Courses[10]:
Anthropology/Law and Society 117
Anthropology/Environmental Studies 129
History/Chicano Studies 101ABQ
History/Environmental Studies 173T
Political Science/Chicano Studies 174
Political Science/Black Studies 176
Sociology/Environmental Studies 121
Sociology/Chicano Studies 144

Principles for selection of GE courses

Courses taken to satisfy the GE requirements in the five areas above are subject to the following seven principles.

1. Courses selected for these requirements must be at least three quarter units each and must be in the 1-193 number sequence at UCSB. (Equivalent transfer courses will apply to these requirements.)

2. Courses selected for these requirements must be on the Letters and Science List of Courses (see G4).

3. Courses in the subject of a student's major will not apply to the area requirements B, C, D or E if the student's major is departmental (rather than interdepartmental). Refer to the chart in A-4 for the classification of each major. Students with double majors and those with interdepartmental or individual majors may use appropriate major classes for the GE requirements.

> *Example: The subject of the English major is English. Accordingly, a student who is in this major cannot use English courses for Area D, Humanities. However, the history and foreign language courses required for an English major will apply to appropriate GE requirements since they are outside the subject of the major.*

4. Courses from a single department will apply to only one of the four Area Requirements B, C, D or E.

> *Example: If an Environmental Studies course is used for Area B-2 of the Natural Science and Mathematics requirement, then no other Environmental Studies courses may be used for any other area of the GE requirements, even if such courses are normally acceptable for that area.*

For this purpose, all courses at UCSB are classified into different departments so that each subject (i.e., art, anthropology, astronomy, etc.) is considered a separate department. The only exception to this is that all courses in biology, botany and zoology are classified into one department called biological sciences.

5. Freshman seminar courses will not apply to any GE requirement.

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[10] See also cross listed courses E2.

6. Courses used for the General Education requirements may be taken on either the letter or the Passed/Not Passed grading option if so offered.[6]

7. Courses used for the American History and Institutions requirement may be applied simultaneously to the GE area requirements B, C, D, and E, subject to the above stipulations.

General Education program - Bachelor of Science degree

The GE requirements for the Bachelor of Science degree are identical to those given above for the Bachelor of Arts degree, with two exceptions. **First, for the B.S. degree students must choose a total of five courses (rather than three) from Area B, Natural Science and Mathematics, and at least four of the five courses must come from Area B-1. Second, for the B.S. degree, students must complete only two of the three Areas** C (Fine Arts), D (Humanities) and E (History, Social Science and Psychology) rather than all three, as is required for the B.A. degree.

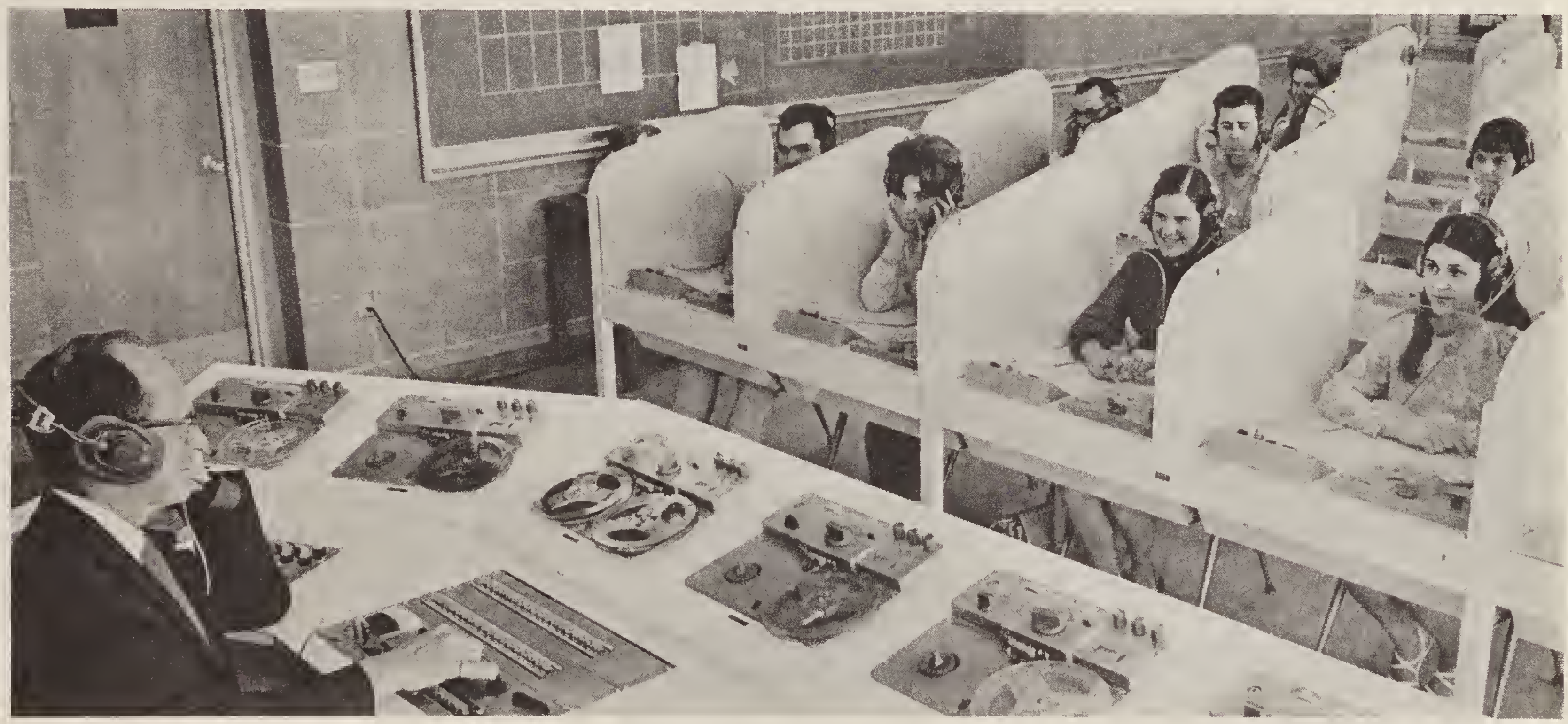
General Education program - Bachelor of Music degree

The Bachelor of Music degree is open by audition only to certain specially qualified students in music. Information concerning admission to this program, as well as degree requirements, is available from the Department of Music[11] and the College office.

Advanced Placement Examinations

Students who completed special Advanced Placement courses in high school and who earned scores of 3, 4 or 5 on the CEEB Advanced Placement Examination taken before high school graduation will receive 10 units of credit toward graduation at UCSB for each such test completed, provided the scores are reported to the Office of Admissions.

The applicability of this credit to the GE requirements is given in the table on the following page.



Language lab draws student smiles.

[6] See Ⓔ6 for information about these grading options.

[11] See Music Department entry in Ⓛ for location.

GENERAL EDUCATION CREDIT FOR ADVANCED PLACEMENT EXAMINATIONS

ADVANCED PLACEMENT EXAMINATION COMPLETED	BACHELOR OF ARTS DEGREE	BACHELOR OF SCIENCE DEGREE	BACHELOR OF MUSIC DEGREE	NO FURTHER CREDIT WILL BE ALLOWED FOR FOLLOWING COURSES COMPLETED THEREAFTER
BIOLOGY score of 3, 4, or 5	satisfies 2 courses in Area B-1	see major dept. re: application of credit toward requirements		Biology 20Z or 20 or Botany 20 or NS 1C
CHEMISTRY score of 3, 4, or 5	satisfies 2 courses in Area B-1	see major dept. re: application of credit towards requirements	This information is available from the College or from the Department of Music.	Chemistry 20 or 25 or NS 1B
ENGLISH				
score of 3	satisfies English 1A	satisfies English 1A		English 1A
score of 4 or 5	satisfies English 1A and 1B	satisfies English 1A and 1B		English 1A or 1B
FOREIGN LANGUAGE* score of 3, 4, or 5	satisfies 2 courses in Area D	satisfies 2 courses in in Area D		courses 1-5 in same language
HISTORY—AMERICAN score of 3, 4, or 5	satisfies 2 courses in Area E-1	satisfies 2 courses in in Area E-1		
HISTORY—EUROPEAN score of 3, 4, or 5	satisfies 2 courses in Area E-1	satisfies 2 courses in Area E-1		
PHYSICS score of 3, 4, or 5	satisfies 2 courses in Area B-1	see major dept. re: application of credit toward requirements		Physics 10 or NS 1A
MATHEMATICS (AB or BC) score of 3, 4, or 5	satisfies 2 courses in Area B-1	see major dept. re: application of credit toward requirements		Mathematics 1 or 2 or 3A or 34A

*Consult major requirements to determine if a specific language is required or recommended.

Unit requirements

General information

All students in the College of Letters and Science must complete a total of 180 units in order to be eligible for graduation.[12] Further, they must earn a total of at least 162 units, including a minimum of 60 upper division units, selected from courses on the Letters and Science List of Courses (see below).

After completion of 105 or more cumulative quarter (or 70 semester) units in the University and other colleges combined, no additional unit credit will be accepted for any courses completed subsequently at a community (two-year) college. Thereafter, courses completed at community colleges will apply to subject requirements, as appropriate, but not to the above unit requirements.

No more than 6.0 units of 1/2-unit physical activities courses (or equivalent transfer courses) will be acceptable toward the total of 180 units required.

[12] See for the limitation on Passed/Not Passed unit credit.

Researcher views apparatus used in laser spectroscopy.

Letters and Science List of Courses

All courses at UCSB are on the Letters and Science List of Courses except the following: Creative Studies • Chemical Engineering[13] • Education • Electrical Engineering/Computer Science[13] • Engineering[13] • Mechanical and Environmental Engineering[13] • Military Science • Nuclear Engineering ⋆ and Physical Activities.

There are certain classes in the College of Engineering that have been approved for inclusion in the Letters and Science list. These are: Chemical Engineering 10, 110AB, 120ABC, 128, 130ABCD, 140AB, 150AB, 158ABC, 160, 180AB, 182, 198 • Electrical Engineering/Computer Science 1, 5, 105, 130ABC, 150, 151, 152AB, 154, 158ABC, 165ABC, 173 • Engineering 1, 3AB • Mechanical and Environmental Engineering 102, 110, 152AB, 157, 170ABC, 180 • Nuclear Engineering 10, 111, 121, 122.

If any non-Letters and Science courses are required for or accepted into a student's major, the units assigned to such courses will be applicable to the Letters and Science unit requirements, as appropriate, at the time of graduation.

G-5 Summary of Letters and Science degree requirements

The following summary gives an overall view of the degree requirements for students in the College of Letters and Science. The references indicate where you can find more information on a given requirement.

General University Requirements-	F
Subject A	F-2
American History and Institutions	F-3
Academic Residence	F-5
Grade-Point Average	F-6
General Education Requirements-	G-3
Bachelor of Arts	G-3
Bachelor of Science	G-3
Bachelor of Music	G-3
Major Requirements[14] -	F-7
Unit Requirements -	G-4

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[13] See below for special exceptions which have been included on the Letters and Science List.

[14] See also appropriate departmental entry in Ⓛ.

Ⓗ College of Engineering

H1 Introduction

Engineering programs have been offered to students at UCSB since 1961. The School of Engineering was established that year and it was redesignated the College of Engineering in 1966. It is now the second largest undergraduate college at UCSB with an enrollment of about 400 students.

The College offers Bachelor of Science and advanced degree programs in Chemical Engineering, Electrical Engineering and Computer Science, Mechanical and Environmental Engineering and Nuclear Engineering. The chart of degrees and majors in A4 gives an overview of the programs available.[1]

In general, a minimum of four years will be necessary to complete the requirements for a Bachelor of Science degree in engineering. Completion of the four-year program should provide adequate background for a student to start a professional career or to enter graduate programs in engineering.

H2 Admission

Applicants wishing to enter the College of Engineering must satisfy the general university admission requirements covered in Chapter Ⓑ

The College strongly recommends that students who plan to study engineering at UCSB design their high school program so as to include the following prerequisite courses:

Courses	High School Units[2]
English	3
United States history	1
Algebra	2
Plane geometry	1
Trigonometry	½
Physics or chemistry (preferably both)	1
Foreign language	2
Other college preparatory subjects	3½
	14

A student who is admitted without one or more of these prerequisite high school courses will have to defer the courses to which they are prerequisite. It is possible that such deferment could alter your program so as to delay your admission to upper division (see below) and your graduation.

Other high school courses suggested for prospective engineering students are machine shop, typing, English composition and public speaking.

Admission as a freshman

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[1] Also see Ⓙ Graduate Division, for grad school information.

[2] A one-year high school course equals one unit.

No engineering examinations are required for admission to either the lower or upper division engineering programs. Admission to the lower division (freshman and sophomore years) does not necessarily imply advancement to the upper division (junior and senior years) at some later time.

Admission to Upper Division

Students entering the upper division of the College of Engineering, either as transfer students or as continuing students, must select a particular curriculum such as Chemical Engineering, Electrical Engineering and Computer Science, Mechanical and Environmental Engineering or Nuclear Engineering.

Requirements for admission to upper division are the same for transfer and continuing students.

1. Satisfaction of the general requirements for admission to the University at the junior level[3] for transfer students.

2. A minimum grade-point average of 2.0 in a lower division program of not less than 84 quarter (56 semester) units. This program must include at least partial completion of the General Education program (see below) of the College, which encompasses the following minimum subject requirements.

Subject Requirements	**Minimum Number of Quarter Units**
Analytic geometry and calculus	20
Chemistry (for engineering and science students)	12
Physics (for engineering and science students)	12
Engineering (subjects such as graphics, properties of materials, surveying, engineering measurements, statics, circuits, electronics, and computers)	15
Humanistic-social studies	9
Unspecified subjects (9 units may be in humanistic-social studies; none may be in Military Science or Physical Education; the remainder may be additional mathematics, chemistry, physics and engineering courses)	16
	84

The University will accept a maximum of 105 quarter (70 semester) units of credit for college courses completed at a community (two-year) college.

The College publishes the annual *College of Engineering Announcement* which contains information about programs, schedules, etc. Copies of this *Announcement* may be obtained by writing to the Dean.[4]

H3 College requirements

The College of Engineering requirements[5] are divided into two programs — the Program of Depth and the Program of Distribution (breadth requirements).

The Program of Depth requirements are developed through the engineering courses of the various majors and are listed in the *Announcement of the College of Engineering*. This program is designed to provide for (1) the development of an understanding of the relationships among the basic principles of physics, mechanics and mathematics and the fundamentals of the more advanced engineering science and (2) a rigorous discipline in methods of analysis and solution of engineering problems.

The Program of Distribution, which consists of the General Education (GE) required courses listed below, is designed to introduce students to fields of study outside engineering and to round out their intellectual development.

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[3] See B3, Advanced Standing, for further information.

[4] Additional information about matters regarding the College of Engineering may be obtained from the College office. See inside front cover for address.

[5] See Ⓕ for General University Requirements and Ⓛ for departmental major requirements.

The Program of Distribution (General Education) Requirements

English 1A-B			8 units
(Speech 10 or 11 may be substituted for English 1A or 1B)			
Free Electives			20 units
Humanities History, Social Science, Psychology		Approximately equal portions in each area	23 units
Mathematics and Science			39 units
Math	18 units		
Physics	9 units		
Chemistry	12 units		

These courses may be taken at UCSB or elsewhere. Students should consult their counselors or the College office to determine the acceptability of transfer courses.

CEEB Advanced Placement Credit

Students may fulfill some of the requirements of the College of Engineering through the College Entrance Examination Board (CEEB) Advanced Placements Tests. The following chart gives tests available and credit allowed for certain scores.

English test A score of 4 or above will be accepted in place of English 1A-B for the reading and composition requirement and the Subject A requirement will be satisfied. A score of 3 will be accepted in place of English 1A and the Subject A requirement[6] will be satisfied.

Chemistry test With a score of 3, 4 or 5, credit will be given for Chemistry 1A-B.

History test With a score of 3, 4 or 5, credit will be given for two History courses toward satisfaction of the General Education requirements. If advanced placement is given for U.S. History, it will also satisfy the American History and Institutions requirement.[7]

Mathematics test Those students with a calculus advanced placement score of 4 or 5 should enroll in Mathematics 5A. Those with a score of 3 should enroll in Mathematics 3C.

H4 Unit requirements and Grade-Point Average

A minimum of 180 quarter units, with at least a 2.0 (C) grade-point average, is required for graduation with a Bachelor of Science degree.[8] Students must maintain at least a 2.0 average in their major field of study and at least a 2.0 average in all upper division work taken in the major.[8]

H5 Summary of engineering degree requirements

The following is a list of the academic requirements which must be satisfied to receive a degree from the College of Engineering.

General University Requirements	F
Subject A	F-2
American History and Institutions	F-3
Academic Residence	F-5
Grade-Point Average	F-6
General Education Requirements	
Program of Depth	H-3
Program of Distribution	H-3
Major Requirements	L
Refer to appropriate major in Engineering section	

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[6] See F2 for information about Subject A.

[7] See F3 for information about this requirement.

[8] Only courses taken in the University of California will be included in these computations.

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I College of Creative Studies

1 Introduction

Aims

The College of Creative Studies at UCSB is unique in the University of California. Students are enrolled on evidence of talent for independent work in an art or a science. The aim of the College is to instruct these students by all the means available to a faculty of artists and scholars whose special interest is to work closely with talented undergraduates. There are no lecture classes in the College, only tutorials and seminars.

Degree and Major Offerings

Work in the College leads to the Bachelor of Arts degree. Majors available are Art (Painting or Sculpture), Biology, Chemistry, Literature, Mathematics, Music Theory and Composition, and Physics.[1]

Announcement

The College publishes the annual *College of Creative Studies Announcement,* containing pertinent information for students. It may be obtained, along with any further information about the College, from the College office.[2]

2 College requirements and curriculum

Admission and Transfer

Candidates for the College must meet the entrance requirements of the University of California.[3] Before a final decision regarding an applicant's enrollment in the College of Creative Studies will be made, a letter of application and a transcript of the applicant's scholastic record must be received by the College. Work in evidence is essential for applicants in the arts; it is helpful but not essential for applicants in mathematics and the sciences.

Students may apply at any time for transfer into another academic unit of the University, with appropriate credit granted for their standing in the College. Those applying for transfer to the College, if accepted, will be enrolled at the equivalent College of Creative Studies level.

Requirements

Though there are no specific required courses, students are required to complete two courses in any field(s) related to the major, plus eight courses in any field(s) outside the major and outside field(s) related to the major.[4] These courses may be taken in the College of Creative Studies or in departments of the College of Letters and Science.

Students in the College are expected to work closely with their advisers. The student's program must be approved by an adviser and signed by the Provost or the Associate Provost before it can be filed with the Registrar's Office.

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[1] The chart in A4 provides an overall view of degrees and majors in the College.

[2] See inside front cover for address.

[3] See Ⓑ for information about admission requirements.

[4] Selection of courses must be determined in consultation with the student's adviser.

Courses in the College are not classified as lower and upper-division, and the only prerequisite for enrollment in any undergraduate course is the instructor's consent.

Grading and unit requirements

There are no letter grades in the College. The grading system is a combination of Pass/No Record and variable unit credit. For each course in the College, the student may receive any number of units from 0 to 6: 0 is No Record (i.e., the course is not recorded on the student's transcript); any number of units from 1 to 6 is Pass. In each course the student enrolls for the specific number of units of work (up to a maximum of 6 units) planned during the quarter; but at the end of the quarter the instructor makes the final determination of the unit value of the student's work in the course.

Courses taken outside the College of Creative Studies will be graded according to the grading system of the College in which the courses were taken.[5] Students are required to maintain a 2.0 grade-point average in courses taken for letter grades outside the College of Creative Studies.

Each unit of credit earned is counted toward graduation; 180 units of credit (under the quarter system) qualifies the student to be evaluated for graduation, with a Bachelor of Arts degree in the College of Creative Studies.

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[5] See E6 for information about the grading system.

J Graduate Division

Introduction

The UCSB Graduate Division offers a wide variety of graduate study programs for qualified students from accredited colleges and universities. Admission is based on promise of success at the graduate level as determined by previous academic records.

Students admitted to graduate status normally will be enrolled in programs leading to (1) a graduate degree, (2) recommendations for teaching and specialist credentials[1], or (3) a certificate in translating and interpreting. A student without one of these objectives may be admitted to Graduate Status only in exceptional cases.[2]

Degrees Offered

The Graduate Division offers the degrees of Master of Arts, Master of Education,[1] Master of Fine Arts, Master of Science and Doctor of Philosophy. The chart in A-4 lists the subjects in which these degrees are offered.

Announcements

The *Graduate Division Announcement* is published annually and contains additional detailed information about offerings within the Division. Other publications which contain graduate information are the *Graduate School of Education Announcement* and the *College of Engineering Announcement.*

Admission to the division

Applying

Candidates should apply to the Office of the Graduate Division or, preferably, to the department of the proposed graduate major for admission to the Division. Two copies of a formal application and two official transcripts from each college and university attended must be submitted to the Graduate Division. Letters of recommendation are also required, as are certain examination scores in some instances.[3]

The Graduate Division deadlines for application for admission:[4]

Fall Quarter	August 1
Winter Quarter	November 1
Spring Quarter	February 1
Summer Session	May 1

Applications may be obtained from the Graduate Division, the Graduate School of Education, or the major department. A $20 application fee must accompany all applications and reapplications.

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[1] See K for further information.

[2] See B10 for further information.

[3] See L for further information.

[4] Note that departmental deadlines may vary from these dates. It is the individual's responsibility to contact the appropriate department for further information.

Payment should be made by check, bank draft or money order payable to The Regents of the University of California.

Approval of an application for graduate admission does not constitute a commitment on the part of the University to accept the applicant as a candidate for a degree or to recommend the applicant for a credential. The University reserves the right to withdraw or withhold from any student the privilege of candidacy or of recommendation prior to the completion of requirements for a degree or credential.

Filing Fee

Students may receive their master's or doctoral degrees without paying full fees for the quarter in which the degree is granted. This may be done only if (1) the student is no longer in attendance as a registered student; (2) is making no use of any University facilty; (3) makes no demands on faculty time except for approval of the dissertation or thesis or the conduct of a final examination, and (4) has completed all other requirements for the degree.

If these conditions are met, a $50 filing fee may be paid in lieu of registration fees for filing a doctoral dissertation, a master's thesis, or the formal final examination for the degree. The filing fee is the same for California residents and nonresidents.

3 Requirements and regulations

Graduate courses are graded either with letter grades A-F as described in E-6 or with the S/U grades described below.

Certain graduate courses have been approved by the Graduate Council for S (Satisfactory)/U (Unsatisfactory) grading. Most individual graduate research and study courses are offered on an S/U basis. Credit is given only for courses graded S, which is equivalent to a B (not B-) or better.

Study List Limits

The maximum number of units for which a graduate student may register in a quarter is based on the distribution of the units between graduate courses and undergraduate courses in the student's program. The complete list of maximum unit combinations is in the *Graduate Division Announcement*.[5] Study Lists which deviate from these limits must be approved by petition to the Dean of the Graduate Division.

Applicants for the Master's Degree

A student who applies for graduate study leading to the master's degree is subject to the following regulations and requirements.

1. Admission and Readmission No student may be admitted to a master's degree program without the approval of the department and the Dean of the Graduate Division.

2. Preparation The student's baccalaureate training must be substantially equivalent, both in major and in general education, to that required by the University of California.

3. Academic Residence Students in master's programs must spend a minimum of three quarters in residence at UCSB. At least one quarter must be a regular session (Fall, Winter, or Spring Quarter) and normally will be composed primarily of course work in the major, exclusive of thesis work. A portion of the residence requirement may be waived at the discretion of the Graduate Council.

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[5] Study List limits for teaching assistants and research assistants are computed in the same manner.

4. Program The study program of every student who is seeking a master's degree must be approved by the individual department. Two program plans are available to students: Plan I (Thesis) in which at least 30 units (including no fewer than 12 graduate units) are required, and Plan II (Comprehensive Examination) in which 36 units (including no fewer than 18 graduate units) are required.

Students seeking the master's degree may enroll in courses numbered 198 and 199[6] but may not use them to satisfy degree requirements. Lower division courses are not accepted for credit toward an advanced degree.

5. Candidacy Students must indicate on their registration packet the quarter in which they intend to complete requirements for the degree. Admission to candidacy is not automatic.

6. Standards of Scholarship Only upper division and graduate courses in which a student is assigned grades A, B,C or S may be counted in satisfaction of the requirements for the master's degree. Students must maintain an average of at least 3.00 grade-points (B) in those courses during enrollment in the Graduate Division at UCSB.

Applicants for the Doctor of Philosophy degree

Applicants for the degree of Doctor of Philosophy (Ph.D.) are subject to the following regulations and requirements.

1. Admission and Readmission A student will be accepted into the doctoral program only with the approval of the department and the Dean of the Graduate Division. Admission to graduate standing in the master's degree program does not imply entrance to the doctoral program.

2. Preparation Students must meet the requirements for admission to graduate standing listed above and must be prepared for significant research in the speciality subject. The student's major training must be substantially equivalent to a master's degree. If a student is admitted to the doctoral program with deficiencies in any of these requirements, the deficiencies must be removed before advancement to candidacy.

3. Academic Residence Students in doctoral programs must spend at least six quarters in residence on the UCSB campus. Three consecutive quarters of residence must be completed in regular session[7] prior to advancement to candidacy. Part of the residence requirement may be waived at the discretion of the Graduate Council.

4. Program The doctorate is a research degree granted upon the recommendation of the student's doctoral committee to the Graduate Dean, after all requirements for the degree have been satisfied. The degree is not granted automatically upon the completion of any list of courses and residence requirements, but reflects the student's professional excellence. The specific program is determined by the doctoral committee, normally chaired by the student's major professor, and is designed to meet the individual needs of the student.

5. Candidacy Advancement to candidacy for a Ph.D. is possible only after passing examinations in one or more modern foreign languages (if required by the program), preliminary departmental examinations, an oral qualifying examination, and payment of a $25 fee.

6. Standards of Scholarship The rules of scholarship for students in doctoral programs are the same as those for master's degree programs.

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[6] Section ☂ has more information about the course numbering system.

[7] Summer Session is not included.

Additional information about graduate degree programs can be found in Ⓛ under the individual majors, or obtained from the Graduate Division and department offices.[8]

Chimp demonstrates capacity to understand human language in psychology experiment.

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[8] See the **Graduate Division Announcement,** which is available on request from the Graduate Division office. See inside front cover for address.

K Graduate School of Education

K1 Introduction

Professional work in education has long been associated with the Santa Barbara campus. Santa Barbara State Normal School of Manual Arts and Home Economics was established officially in 1909 as a successor to institutions which traced their roots to the early 1890's. In 1917, the school added a program to prepare elementary school teachers and changed its name to Santa Barbara State Normal School.The 1920's saw the initiation of a four-year general education program for teachers and a further change in name to Santa Barbara State Teachers College, which conferred its first Bachelor of Arts degree in 1927.

The College took its place as a branch of the University of California in 1944. The School of Education was founded as a separate unit in 1961, followed by conversion to graduate-level status in 1967. In the years since, the School has retained its commitment to teacher preparation while adding programs which prepare students for advanced specializations and disciplined research.

K2 Teaching credentials

Inquiries about teaching credentials should be addressed to the Education-Advising Office, Graduate School of Education.[1] Any student who expects to seek a credential should consult as early as possible after enrollment with an adviser in the Education-Advising Office. For further information, including admission requirements and the content of teaching credential programs for graduate students and selected undergraduate students, refer to the *Graduate School of Education Announcement*.[2] A brief summary of admissions procedures appears below.

All post-baccalaureate candidates for teaching credentials must be admitted to the Graduate Division[3] and are subject to the following regulations and requirements.

1. Admission and Readmission Applications for admission to credential programs must be reviewed by the departments of their teaching field and the Graduate School of Education. The final decision for admission rests with the Dean of the Graduate Division; this decision is based on the recommendation of the Dean of the Graduate School of Education.

2. Preparation Applicants who complete the baccalaureate at other institutions must offer substantially the same General Education background and preparation in a major teaching field as required at UCSB. Deficiencies in either area must be removed prior to admission to student teaching.

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[1] See inside front cover for address.

[2] Write or contact the Graduate School of Education for a current announcement. See inside front cover for address.

[3] See J2 for information about admission to the Graduate Division.

3. Scholarship Academic requirements for admission into teaching credential programs are the same as for admission into master's degree programs. The Dean of the Graduate Division may modify these standards and give consideration to high scores in recognized national testing service achievement tests[4] or evidence of a potential for success in teaching. Applicants who believe they have sufficient strength in other aspects of teaching preparation which may compensate for a deficient grade-point average should contact the Education-Advising Office in the Graduate School of Education.[5]

Students admitted to teaching credential programs must maintain a grade-point average of at least 3.0 (B) in all upper division and graduate courses in which they enroll subsequent to admission. A student who fails to maintain this average is subject to dismissal from the credential program.

4. Residence Students in teaching credential programs are required to spend three quarters in residence at UCSB. At least one quarter of study must be completed during the regular session (Fall, Winter, or Spring Quarter). Most programs begin in the Fall Quarter and conclude at the end of Spring Quarter.

K3 Specialist credentials

Address inquiries to the Office of the Dean, Graduate School of Education[6] for instructional specialist or special services credentials in the following fields.

- Instructional Specialist in Bilingual/Cross-Cultural Education
- Instructional Specialist in Reading
- Instructional Specialist in Early Childhood Education
- Pupil Personnel Services as a School Counselor, Psychological Examiner or School Psychologist
- Administrative Services

A master's degree in Education may be pursued in conjunction with preparation for each of the specialist or special services credentials listed above. All applicants for specialist credentials offered by the Graduate School of Education must be admitted to the Graduate Division. Specific details on admissions requirements for and the content of the various specialist and special service credential offerings appear in the *Graduate School of Education Announcement.*

Inquiries about the Specialist Credential in Speech and Hearing Disorders should be addressed directly to the Department of Speech.[7]

K4 Master's degree programs

All applicants for a master's degree must be admitted to the Graduate Division; inquiries should be directed to the Office of the Dean, Graduate School of Education.[8]

The School offers the Master of Arts in Education and the Master of Education degrees. Within a general master's program, a candidate elects an area of emphasis or concentration as specified below.

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[4] Miller Analogies or Graduate Records Examination Aptitude Test.

[5] See inside front cover for address.

[6] See inside front cover for address.

[7] See Speech Department entry in Chapter Ⓛ

[8] See inside front cover for address.

For concentrations in Confluent Education (integration of the affective and cognitive domains of learning) or Counseling Psychology, both the M.A. in Education and the M.Ed. are available. Other concentrations within the M.A. program include Educational Administration, Educational Psychology, Early Childhood Education, Instruction, International Education (with concentration on Indonesia and Malaysia) and Reading. A concentration in Bilingual/Cross-Cultural Education is being developed.[9]

The degree of Doctor of Philosophy

The Ph.D. program is designed as preparation for research, instruction in post-secondary institutions, and expert service in a variety of other educational settings. **All applicants must be admitted to the Graduate Division; inquiries should be directed to the Office of the Dean, Graduate School of Education.**[10]

The concentrations for which candidates may be accepted are Confluent Education (integration of the affective and cognitive domains of learning), Counseling Psychology, Educational Administration, Educational Psychology, Early Childhood Education and International Education (with concentration on Indonesia and Malaysia).[11]

Credential and Degree Programs — Graduate School of Education

	Credential		Degree		
Program Emphases	**Teaching Credential**	**Specialist Credential**	**Master of Arts in Education**	**Master of Education**	**Ph.D. in Education**
Multiple Subjects (Elementary)	✓				
Single Subject (Secondary)	✓				
Speech & Hearing		✓[1]			
Confluent Education			✓	✓	✓
Counseling Psychology		✓[2]	✓	✓	✓
Educational Psychology			✓		✓
Early Childhood Education		✓	✓		✓
Educational Administration		✓	✓		✓
Bilingual/Cross-Cultural Educ.		✓			
Reading		✓	✓		
Instruction			✓		
International Education			✓		✓

[1] The Specialist Credential in Speech and Hearing Disorders is offered through the Department of Speech in the College of Letters and Science.

[2] Including specializations in School Counseling, Psychological Examinations, and School Psychology.

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[9] For more detailed information about program requirements and content, refer to the Education section Ⓛ and the *Graduate School of Education Announcement.*

[10] See inside front cover for address.

[11] For details on the doctoral program, refer to Chapter Ⓛ Courses of Instruction, Education section and the *Graduate School of Education Announcement.*

L Courses of Instruction

L1 Presentation of offerings

This chapter contains the departmental course listings, all majors (departmental and interdepartmental) and programs offered at UCSB.[1] Courses (lower-division 1-99 through advanced study and research 500-599) are arranged alphabetically by the department in which they are taught.[2]

In addition to the departmental information and course listings contained in this section, there is information on the Education Abroad Program[3] and Subject A.[4]

Departmental entries include descriptions of programs, aims, requirements, a faculty listing and correspondence information. Teaching credential programs and career opportunities, where applicable, are also described.

L2 Numbering of courses[5]

Lower Division

Lower division courses are numbered 1-99 and are open to all UCSB students. No lower division course may be taken for upper division or graduate credit.

Upper Division

Upper division courses, numbered 100-199, are open to all students who have met the necessary prerequisites, as indicated in the course listing (see sample below). No graduate course credit can be allowed for any upper division course even if additional course work is completed.[6]

Students in the College of Letters and Science should review the Letters and Science List of Courses in G4 to determine if that course is applicable to the 60 upper division Letters and Science unit requirement before enrolling in any upper division course.

Independent studies

198/199 courses are advanced and offer the nearest approach to graduate study available within the undergraduate curriculum. Students seeking to enroll in 198/199 courses must be in upper division standing (84 or more units completed) and must be able to demonstrate evidence of an appropriate academic background. Students are limited to five units per term, 15 units per year and 30 units total in all such courses, subject to departmental restrictions.[7]

Graduate courses

Graduate courses numbered 200-299 ordinarily are open only to students who have completed at least 12 upper division units basic to the subject matter of the course. Exceptionally qualified undergraduate students may petition to enroll in graduate courses and

[1] See the University Extension Bulletin, *Quest*, for listings of Extension courses offered each quarter.

[2] All courses offered in the College of Creative Studies are listed in that College entry.

[3] See also A7 for information about EAP.

[4] F2 also contains information about the Subject A requirement.

[5] Course numberings which are suffixed with the letter "L" are lab classes (e.g., 114L). Certain courses are cross-listed in two separate departments, as noted in their course descriptions (e.g., Black Studies 114A is the same as Music 114A).

[6] However, a limited number of upper division courses may be applied to fulfilling graduate degree requirements. See departmental entries for specific requirements.

[7] Refer to the front portion of the *Schedule of Classes* for details concerning enrollment. See also descriptions of specific courses under departmental listings for additional restrictions.

should do so prior to pre-enrollment.

Courses numbered 300-399[8] are designed for a professional sequence in approved credential programs. Providing theory related to field practice in teaching, they cover teaching strategies, instructional materials and the psychology of learning.

Courses in the 400[8] series are devoted to the techniques and practices of translation and interpretation from a foreign language to English and vice versa. Normally, these may not be applied to graduate degree requirements.

The 500-599 courses are reserved for advanced study and research, and are not open to undergraduates.

L3 Sample course listing

Each listing in the following departmental entries contains the course number,[9] course title, number of units of credit,[10] instructor, prerequisites and description. A course in which the instructor is listed as "Staff" may be offered by various instructors.

Sample:

Course Number	Course Title	Number of units of credit	Instructor
120A.	**Primate Behavior**	(4)	Symons

Prerequisite: Anthropology 5. Survey of social behavior in non-human primates emphasizing field studies. Course will stress function and evolution of behavior.

Description

The quarterly *Schedule of Classes* should be consulted to determine when courses are offered. Students planning their schedules in advance should contact the individual department to learn when a particular course is to be offered.[11]

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[8] See University Extension Bulletin, *Quest,* for information regarding Extension courses in these number series.

[9] See above explanation of course numbering system.

[10] See E6 for a description of the unit system.

[11] For detailed information about the rights and responsibilities of students and instructors, see E8

African Area Studies

Faculty

Gerard G. Pigeon. Ph.D., Assistant Professor of Black Studies (Chairman). (This program is administered through the Department of Black Studies. See departmental entry for faculty information.)

Concerns of the program

The major in African Area Studies is an interdepartmental major which is designed to enable the student to acquire a broad interdisciplinary background in African cultures. The major is designed to serve the interest of those students who seek a general knowledge of Africa and its peoples beyond the more restricted African offerings of individual departments or to provide those students who wish to pursue graduate study with an interdisciplinary foundation in African Studies as preparation for more specialized professional training.

Bachelor of Arts

Preparation for the major

Arabic/1,2,3,4,5 and French/1; or French/1,2,3,4,5,6, or 14; *or* a combination of these two language sequences. With the permission of the Program adviser twenty-four units of Portuguese or Spanish may be substituted for an African language. Other exceptions to the aforementioned policy on the language requirement will be appraised on an individual basis. The language requirement may be satisfied upon demonstration of competence at the required level. The Program is to be made out by each student in cooperation with an adviser in the Department of Black Studies and will be based primarily upon needs and objectives of the individual student.

Upper Division major

Thirty-six units of Upper Division courses selected from the following are required:

Anthropology/
138 • Traditional Cultures of Africa
148AB • Urbanization in Developing Countries
149 • Social Change in Modern Africa
151 • Fossil Evidence for Human Evolution
165 • African Prehistory
172 • Colonialism: Social Effects

Arabic/
110 • Introduction to Arabic Literature

Art/
151F • African Art Part I. The Western Sudan and West Africa east to Nigeria
151G • African Art Part II. Nigeria. east into the Cameroons and south to the Congo
151H • The Art of Festivals
165B • Islamic Architecture

Black Studies/
105 • An Introduction to African Nationalism
107 • Ecological Perspectives of African Development
113 • African Mythology and Religion
114A • History of Jazz
115 • African Philosophy
130A • French African Literature and Literary Figures
130B • French African Literature After the Independence
133A • Introduction to West Indian Literature
133B • Introduction to West Indian Literature
133C • Introduction to West Indian Literature
134 • Seminar on Aime Cesaire
140 • Ethnomusicology
160A • Analysis of the Racist Experience
160B • White Racism and the African Continent
160C • The African Liberation Movement

English/
190 • Ethnic Literature

History/
143 • The Nile Quest
144 • Imperialism and Resistance in Africa
147 • African Civilizations
147Q • Special Studies in Africa: Modern African Intellectual History

Political Science/
146 • The Political Systems of Tropical Africa
147 • The Politics of Developing Areas

Religious Studies/
140A • Islamic Religion
140B • Islamic Sects and Mystical Movements
140C • Developments in Modern Islam since the Middle Ages

Spanish and Portuguese/
[s]199 • Independent Studies in Portuguese

Teaching credentials

Students who complete a major in African Area Studies may be eligible to pursue a California teaching Credential. Consult with the department credential adviser in African Area Studies for specific departmental requirements.

Details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Correspondence information

Department of Black Studies, South Hall, Rm. 4631, University of California, Santa Barbara, California 93106. Phone: (805) 961-3800.

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[s] See L-2 for 198/199 independent studies unit limitation.

Anthropology

Professors

David W. Brokensha, Ph.D., Oxford; modernization, urbanization, plural societies, migration and farm labor: emphasis on Africa.

Charles J. Erasmus, Ph.D., Berkeley; economic development and social change, comparative ethnological theory; Latin America; agricultural.

Brian M. Fagan, Ph.D., Cambridge; Old World archaeology, African prehistory, multi-media teaching; Africa.

Morton H. Fried, Ph.D., Columbia; cultural theory, cultural evolution and ecology, social and political organization; China, East Asia, Overseas Chinese.

Thomas G. Harding, Ph.D., Michigan; economic anthropology, the Pacific.

William Madsen, Ph.D., Berkeley; primitive religion, culture and personality, economic development and social change; Spanish American society, Mexico.

Elman R. Service, Ph.D., Columbia; ethnology and anthropological theory; Latin America.

Albert C. Spaulding, Ph.D., Columbia; archaeology, cultural ecology, methods and theories of anthropology; North America.

Associate Professors

Donald E. Brown, Ph.D., Cornell; sociocultural anthropology; Southeast Asia (Chairman).

Manuel L. Carlos, Ph.D., UCSB; political anthropology; Latin America.

Elvin J. Hatch, Ph.D., UCLA; history of anthropology, social history of rural America, leadership and factionalism in small communities.

Assistant Professors

Michael A. Glassow, Ph.D., UCLA; archaeology, cultural ecology, cultural evolution, primitive technology, method and theory in archaeology; North America.

Marilyn K. Martin, Ph.D., SUNY Buffalo; cultural anthropology; Africa.

Mattison Mines, Ph.D., Cornell; social anthropology, kinship, stratification, caste; South Asia and India.

Donald Symons, Ph.D., Berkeley; physical anthropology, primate social behavior, the evolution of human behavior.

Barbara Voorhies, Ph.D., Yale; archaeology, cultural ecology; Mesoamerica.

Phillip L. Walker, Ph.D., Chicago; physical anthropology, osteology; primatology, human evolution.

Concerns of the department

Anthropology is the study of man in the broadest sense. It concerns itself with the biological, cultural and historical aspects of mankind. The aim of the anthropology major is threefold: (1) to prepare for graduate school those students desiring to work professionally in anthropology, (2) to prepare students for careers either in secondary education or in social work not requiring graduate study and (3) to provide a background in behavioral studies for students desiring a broad education in either the biological or the social sciences.

Two emphases are recognized within the anthropology major: cultural anthropology and physical anthropology.

Bachelor of Arts/Cultural emphasis

Preparation for the major

Required: Anthropology/2 (or 101), 3, 5.

Upper Division major

Required: Thirty-six units of Upper Division anthropology (except 101, and 103) 8-12 of which may be in related courses in other departments or subject field, including the tutorial major (see department for acceptable courses).

Bachelor of Arts/Physical emphasis

Preparation for the major

Required: Anthropology/2 (or 101), 3, 5; Biology/21 and 133; Zoology/25 and 25L. Recommended: Zoology/40 and 40L.

Upper Division major

Required: Thirty-six units of Upper Division anthropology (except 101, and 103) at least 12 of which are in physical anthropology. 8-12 units may be in Biological Sciences (see department for acceptable courses).

Master of Arts

Requirements

1. In addition to fulfilling the general requirements for admission to graduate status, the department requires an undergraduate major in anthropology or its equivalent and successful performance on the Graduate Record "Aptitude Test". Although the department offers both the M.A. and Ph.D. degrees, students will be admitted to graduate study only if they plan to continue to the doctorate. Applications will be accepted only for admission in the Fall of each year. The deadline for applications is February 1.

2. A comprehensive examination will be required of all cultural anthropology students and will serve as the examination for the Ph.D. degree. A "pass with honors" qualifies the student for Ph.D. preparation and automatically awards an M.A. degree. A "pass" awards an M.A. but disqualifies from further graduate work in anthropology on this campus.

Archaeology students are not required to take the comprehensive examination. Instead, with the help of their Advisory Committees they work out specialized programs of study at the beginning of their graduate training. These programs include appropriate courses, selected to augment the students' general background and to prepare them for field research. Also included in these programs is the preparation of several papers, to be read by the Advisory Committees, on topics central to the students' interests and research goals.

3. Some of the course work may be taken in other departments with the approval of the Graduate Committee.

Doctor of Philosophy

Requirements

1. See No. 1 above for departmental admission requirements.

2. Cultural anthropology students, after passing the comprehensive examination with honors (see No. 2 above), must submit an acceptable research proposal to their doctoral advisory committees in order to qualify for Ph.D. candidacy.

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*Absent on Leave 75-76

For archaeology students, the writing of an acceptable research proposal is incorporated into the individual's specialized program of study (see No. 2 above). These students are advanced to candidacy for the Ph.D. when this portion of their program is complete.

3. The student must demonstrate the methodological competencies required by research specialty, such as a foreign language, linguistics, statistics, historiography, laboratory techniques, etc.

4. Field work of at least three quarters' duration is required before the Ph.D. can be granted. The dissertation normally is based on field research, but this is not a requirement.

5. Experience as a Teaching Assistant in Anthropology is required before the Ph.D. can be granted.

6. The complete and authoritative degree regulations are available on request from the Department of Anthropology.

Career opportunities

Most undergraduates in anthropology at UCSB select this department because of the opportunity it affords to acquire a sound liberal education, even though they do not intend to become anthropologists. However, the curriculum is quite suitable for the professionally oriented student as well.

Normally, the minimum professional requirement to become an anthropologist is the Ph.D., and virtually all who hold this degree are teachers and researchers in universities and museums. Community colleges offer some teaching positions for those who hold the M.A. Graduates with the B.A. in anthropology are likely to pursue careers in teaching, government service, law or business.

Teaching credentials

Students who complete a major in this department may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education - Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Department of Anthropology, North Hall 2051, University of California, Santa Barbara, California 93106. Phone: (805) 961-2257.

Anthropology

Lower Division courses

Freshman Seminars To be offered on an irregular basis. For information see department.

2 • Introductory Cultural Anthropology (4) Madsen
The nature of culture: survey of the range of cultural phenomena, including material culture, social organization, religion, and other topics.

3 • Introductory Archaeology (4) Fagan
Basic principles of archaeology; human culture from man's emergence as a culture-bearing animal. Survey of selected archaeological sites in the New and Old Worlds. Largely self-paced learning.

5 • Introductory Physical Anthropology (4) Symons
Human evolution: evolutionary thought, origin and antiquity of the primates, fossil man and living races.

Upper Division courses

101 • General Anthropology (4) Staff
Major principles and concepts of anthropology; may serve as prerequisite for Upper Division courses. Not open to students who have had Anthropology/2.

102 • Peoples and Cultures of the World (4) Staff
A survey of representative primitive and archaic cultures of the world in evolutionary perspective.

103 • World Prehistory (4) Fagan, Voorhies
An introduction to the prehistory of humankind from the earliest times up to the advent of literate civilization for the interested layman, which emphasizes: processes of cultural change, the origins of men, agriculture, and the origins of civilization, and the present state of research into human prehistory. Not open to anthropology majors. Partly self-paced learning.

104 • Material Development vs. Social Man (4) Erasmus
Primitive "communism," 19th century utopias, and contemporary collectives and communes provide comparative data for analyzing First and Third World hopes for social "progress" in the face of technological development, competitive consumption and limited life-space.

104H • Material Development vs. Social Man (1) Erasmus
After Anthropology/104 begins, selected students will be invited to enroll in an honors seminar conducted by the professor. Such students will receive one unit for the honors seminar (104H) in addition to the four units for Anthropology/104.

105 • Human Variation (4) Staff
Prerequisite: Anthropology/5. An examination of traditional race concepts contrasted with an approach to human variation through the analysis of biologically adaptive traits.

106A—B • Currents in Anthropological Thought (4, 4) Hatch
Prerequisite for 106B: 106A. The emergence of some of the major systems of thought in 20th century anthropology, with emphasis on the progressive refinement and diversity of the modern culture concept. **A:** Concentrates on major writers **B:** Concentrates on major intellectual themes.

107 • Psychological Anthropology (4) Staff
Human socialization, sexual behavior, aggression, mental illness, national character and social pathology in cross-cultural perspective.

108 • Traditional Political Systems (4) Brown
A survey of anthropological contributions to the cross-cultural study of government.

110 • Technology and Culture (4) Harding
The role of tools and technical knowledge in the evolution of societies. The development and spread of major technological innovations from the Palaeolithic to the Industrial Revolution. The impact of industrial technology on primitive and archaic cultures.

113 • Comparative Society (4) Mines
Prerequisite: Anthropology/2 or consent of instructor. Comparative study of the structure, development, and function of human society; social, religious, political and economic institutions.

114 • Social Organization (4) Mines
Prerequisite: for majors only. Emphasis on various theories of social structure and social organization in cross-cultural perspective; kinship, social stratification, conflict and disorganization.

115 • Law and Warfare in Non-Western Societies (4) Service
The nature of law and warfare in non-Western societies. Analysis of the strategy and tactics of conflict resolution in relation to ecological, economic and political aspects of life in non-Western societies.

116 • Magic, Religion and Witchcraft (4) Madsen
Cultural parallels and variation in supernatural beliefs and practices. The origin and development of supernaturalism from primeval man through contemporary societies. The techniques of supernatural control and relativity of "reality." Today's search for sanction and meaning.

117 • Comparative Law (4) Barrymore
Origins - development and spread of the English common law system as a vantage for the study of comparative legal systems. **This course is the same as Law and Society 117.**

119 • Evolution of Modern Culture (4) Service
The development of modern corporate nation-states in anthropological perspective.

120 • Primate Behavior (4) Symons
Prerequisite: Anthropology/5. Survey of social behavior in non-human primates emphasizing field studies. Course will stress function and evolution of behavior.

120B • Primate Behavior (4) Symons
Prerequisite: Anthropology/120A. Survey of social behavior in non-human primates emphasizing field studies. Course will stress function and evolution of behavior.

121 • Human Evolution (4) Walker
The nature and results of the evolutionary processes responsible for the formation and differentiation of human populations.

125 • The Female of the Species (4) Martin, Voorhies
Prerequisites: Anthropology/2 (101) and 5. Comparison of biological attributes of human and non-human female primates and culturally defined behavior of women in selected primitive and modern societies.

126 • Theory and Method in Archaeology (4) Glassow
Prerequisites: Anthropology/2, 3. A survey of the development of archaeological theory and method, emphasizing the last 30 years and considering the nature of archaeological explanation, methods of analysis and measurement of cultural variability. A consideration of major contemporary archaeological problems and approaches to their solution.

128 • Origins of Civilization in the Near East (4) Staff
A critical examination of explanations of state-origins, based on a review of relevant archaeological data; the focus will be on Mesopotamia, but evidence from the New World, China and elsewhere will be considered.

129 • Agriculture and Environment (4) Hudson
Traces the origins of agriculture in prehistoric Europe, Middle East, North and South America. The social and environmental consequences of agriculture are examined as well as various hypotheses explaining its origin and subsequent role in the rise of great civilizations. **This course is the same as Environmental Studies 129.**

131 • North American Indians (4) Glassow
The origins, development, and attainments of New World aboriginal cultures north of Mexico.

133 • Cultural Development in Mesoamerica (4) Voorhies
Prerequisite: Anthropology/3 or 103. The prehistory of Mesoamerica from earliest occupation to the sixteenth century.

134 • Modern Cultures of Latin America (4) Carlos
Continuities and changes in the contemporary cultures of peasant and urban societies in Mexico, Central and South America. Examination of cultural institutions and values, social stratification, village and urban life, elites, urbanization and national socio-cultural integration.

134H • Modern Cultures of Latin America (1) Carlos
Following the first lecture of 134, selected students may apply for participation in an honors seminar for an additional unit of credit or a total of five units for Anthropology/134.

135 • Modern Mexican Culture (4) Carlos
The impact of industrialization, urbanization, technology, and modern communications on Mexican society in the Twentieth Century. Examination of contemporary urban and rural communities, class structure, value orientations, ethnic minorities and national integration. Seminar.

136 • Peoples and Cultures of the Pacific (4) Harding
The aboriginal and modern cultures of Polynesia, Melanesia, and Micronesia.

138 • Traditional Cultures of Africa (4) Martin
A general survey of traditional African cultures.

140 • Peoples & Cultures of the Middle East (4) Staff
Study of contemporary Turkey, Iran, Syria, Lebanon, Iraq, Jordan, Saudi Arabia and Egypt. Emphasis will be on local problems in development. Major source material and topics will center on, but will not be strictly confined to, the anthropological literature.

142 • Peoples and Cultures of India (4) Mines
Rise of Indian civilization from prehistoric times to the present; regional divisions of India; family, kin, caste groups and village life; social organization above village level; effects of urbanization, British rule and independence.

144 • Peoples and Cultures of Southeast Asia (4) Brown
Survey of societies and cultures of Burma, Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore, Brunei, Indonesia and the Philippines, with emphasis on traditional and modern social structures.

145 • Far Eastern Societies (4) Staff
The kinship, economic, political and religious aspects of social organization in the recent traditional and modern societies of China, Japan, Korea and Tibet.

148A • Plural Societies (4) Brokensha
Alternate years with *148B*. An examination of economic, social and political aspects of selected plural societies; emphasis on developing countries.

148B • Urbanization in Developing Countries (4) Brokensha
Alternate years with *148A*. Growth of cities, patterns of migration, social effects of urbanization on rural and urban areas; comparative aspects.

149 • Social Changes in Modern Africa (4) Brokensha
The social, economic, political and religious institutions in selected societies from English speaking tropical Africa.

150 • Advanced Physical Anthropology 4) Staff
Prerequisite: Consent of instructor. An evaluation of areas of human genetics, population genetics, serology, dermatoglyphics and anthropometry that pertain to current physical anthropology.

151 • Fossil Evidence for Human Evolution (4) Symons
Prerequisites: Anthropology/3, 5. Geology/3 and Zoology/25 recommended. Presentation and discussion of the major pieces of the fossil evidence for human evolution. Various interpretations will be discussed in the light of evolutionary theory and with regard to the intellectual climate of opinion prevalent at times of formulation.

152A—B • Human Osteology (4-4) Walker
Prerequisites: Anthropology/3, 5, and permission of instructor. The biology of bones and teeth: application to study of human remains from archaeological sites; morphology, paleopathology, statistical methods. Students are given practical experience in analysis. Course designed for students who intend graduate work in physical anthropology or archaeology.

153 • Seminar on Primate and Human Sexual Behavior (4) Brown, Symons
A critical examination of the nature and determinants of human sexual behavior as evidenced in nonhuman primate behavior as well as a cross-cultural view of human societies. Broadly biological, evolutionary and cultural approaches will receive equal emphases.

154 • Advanced Social Anthropology (4) Martin
A critical review of the major theoretical and methodological contributions by American and British social anthropologists to the study of kinship, economic, legal, religious and political systems. Course designed for students who intend graduate work in social or behavioral sciences. Seminar.

155 • Social Structure and Historical Process (4) Brown
Prerequisite: Enrollment with consent of the instructor. A survey of approaches to the comparative study of sociopolitical structures and the processes of their maintenance or change. Open to majors in the social sciences and history. Seminar.

156 • Military in Developing Societies (4) Staff
The evolution of warfare in archaic and modern societies; role of the military in developing nations with emphasis on Asia.

160 • Cultural Ecology (4) Voorhies
Prerequisite: Anthropology/2 or 3. Study and comparison of the various interrelations between pre-literate societies and their total natural and social environments.

163A • Archaeology of North America (4) Spaulding
Prerequisite: Anthropology/3. A survey of North American archaeology east of the Rocky Mountains and including the Arctic and Alaska, with an emphasis on regional developments as they relate to each other and demonstrate continuity of cultural traditions over long time periods.

163B • Archaeology of North America (4) Glassow
Prerequisite: Anthropology/3. A survey of North American archaeology west of the Great Plains including northern New Mexico and Baja California, with an emphasis on regional developments as they relate to each other and demonstrate continuity of cultural traditions over long time periods.

164 • Old World Archaeology (4) Fagan
Prerequisite: Anthropology/3. A survey of a single aspect of prehistory in the Old World. Normally the course will cover European and Near Eastern Stone Age archaeology. Largely self-paced learning.

165 • African Prehistory (4) Fagan
Prerequisite: Anthropology/3. The prehistoric archaeology of Africa from the earliest times up to A.D. 1500. The emphasis of the course will be on the later Iron Age archaeology of sub-Saharan Africa. Largely self-paced learning.

166 • Historical Archaeology (4) Fagan
Prerequisites: Anthropology/3 and consent of instructor. The archaeology of North America from AD/1620 to 1900 is surveyed with special reference to the methods and theory of historical archaeology. Particular attention is paid to western North America and to problems of preservation and reconstruction of historical archaeological sites. Largely self-paced learning.

171 • Economics of Primitive and Peasant Societies (4) Harding, Mines
Economic life of pre-market societies and the social consequences of their involvement in a money economy.

172 • Colonialism: Social Effects (4) Brokensha
Prerequisite: Consent of instructor. Study of historical and social processes of colonialism in selected societies: influence on traditional institutions in Africa, Pacific, Asia; legacies in contemporary independent nations.

173 • Political Anthropology (4) Carlos
Comparative political institutions and behavior among contemporary peasant societies. Emphasis on Latin American local level politics, and its relationship to national political integration and nation-building.

175A—B • Seminar in History of Ethnology (4,4) Hatch
Prerequisites: Anthropology/2, 106, or consent of instructor. A study of the history of anthropological theories and schools of thought, emphasizing such early writers as Durkheim, Malinowski, and Boas.

176 • Seminar in Contemporary Ethnology. (4) Staff
Discussion seminar based on intensive, critical reading of important anthropological works. Intended as preparation for graduate work; enrollment restricted to majors with a 3.5 GPA minimum.

177 • Seminar on Explanation (4) Erasmus
Prerequisite: Consent of the instructor. Seminar discussions of articles on religion, peasantry, functionalism and culture change. Students trained to analyze research objectives and explanatory procedures of anthropologists and to write forceful, brief critiques.

178 • Seminar on Utopian Societies (4) Erasmus
Prerequisites: Anthropology/104 and consent of the instructor. Critical examination of futurist and utopian social schemes in the light of cultural evolution and of past and present communal and collective experiments.

179 • Seminar on the Anthropology of Symbolism (4) Mines
Prerequisite: Consent of instructor. A cross-cultural inquiry into the nature and role of symbolism in human society. Discussions on non-verbal communication, myth, ethos, world view, national symbols, political ideology and the ideology of social structure as symbolic systems.

181 • Methods and Techniques of Field Archaeology (4) Fagan, Glassow
Prerequisite: Anthropology/3. Introduction to archaeological research design and field techniques of data collection; including lectures and demonstrations, excavation and laboratory work on Saturdays.

182 • Methods of Archaeological Analysis (4) Spaulding
The analysis, description, and comparison of archaeological assemblages, a discussion with examples of analytical methods required for attribute recognition, artifact typology, site seriation and assemblage taxonomy.

183 • Field Training in Archaeology (8) Glassow
Prerequisite: Anthropology/2, 3, or equivalent, plus Upper Division standing and consent of instructor. Introduction to the planning and implementation of full-scale archaeological projects, with a strong emphasis on the formulation of hypotheses and the collection of data relevant to testing them. Instruction in various forms of data collection, including site reconnaissances, mapping, excavation of structural features, use of aerial photographs and probabilistic sampling designs.

184 • Seminar on North American Archaeology (4) Spaulding
Seminar in selected topics in North American prehistory.

185 • Ethnographic Field Methods (4) Staff
Introduction to aims and working methods in ethnographic field work.

193 • Problems in Mesoamerican Prehistory (4) Voorhies
Prerequisites: Anthropology/133 and consent of instructor. Seminar in selected problems in archaeology of Mesoamerica.

197 • Special Courses (1,4) Staff
Prerequisites: Qualified Upper Division students. Intensive studies or projects, focused on special problems related to anthropology which are not covered by other courses. Consent of the instructor and the department chairman are required.

***198 • Senior Honors Readings** (1,5) Staff
Intended for students who know their own reading needs. May be repeated to a maximum of 15 units, from a different staff member each time. Only students with a 3.5 grade average in anthropology (or special permission) may enroll. Normally requires regular meetings with the instructor.

*** 199 • Independent Studies in Anthropology** (1-5) Staff
May be taken twice (from different staff members). Students must execute a limited research project on their own initiative. Not open to students seeking assigned research topics or to students with less than a 3.5 grade average in anthropology.

Graduate courses

200 • Summer Field School in Archaeology (8) Staff
Introduction to the planning and implementation of full-scale archaeological projects. The opportunity will be given to formulate and carry out research designs and to direct crews in data collection.

206 • Current Problems in Archaeology (4) Staff
Critical examination of a selected aspect of contemporary archaeological research and theory. Topics will vary from year to year. Course may be repeated for credit.

207 • Ecological Perspectives in Archaeology. (4) (every other year) Staff
Prerequisite: Anthropology/160. Investigation into cultural ecological theory and its application to archaeological problems of explanation.

208 • Methods and Techniques of Archaeology (4) Spaulding
The description, analysis and interpretation of archaeological data.

209 • Problems in Mesoamerican Archaeology. (4) Voorhies
A problem-oriented approach to the major issues of Mesoamerican prehistory. Seminar.

210 • African Prehistory (4) Fagan
Prerequisite: Anthropology/3. The prehistoric archaeology of Africa from the earliest times up to A.D. 1500. The emphasis of the course will be on the later Iron Age archaeology of sub-Saharan Africa.

220 • Prehistory and Ethnography of Western North America (4) Staff
Prerequisites: Consent of instructor and Anthropology/163. Seminar. Investigation of selected problems of prehistoric and historic developments in North America west of the Rocky Mountains.

221 • Ecological Perspectives in Archaeological Studies (4) Staff
Prerequisite: Anthropology/160. Investigation of archaeological problems which may be approached from an ecological perspective.

230 • History of Anthropology (4) Service
Lectures and discussion of the main problems and currents of anthropological thought from the Enlightenment in Europe through the modern academic phase.

232 • Current Problems in Ethnology (4) Staff

235A—B • Seminar in Political Anthropology (4) Service and Carlos
A continuous two quarter seminar. 235A is prerequisite for 235B.

237 • Anthropology of Development (4) Staff
An examination of the role of anthropology in the process of development. Theoretical and practical aspects of studies of urbanization, modernization, agriculture, health, education, labor, with emphasis on Africa.

238 • Economic Anthropology (4) Harding, Mines
A critical examination of the main themes and theories of economic anthropology.

250 • Method and Theory in Anthropology (4) Staff
A discussion of general problems in anthropology.

252 • Social Anthropology (4) Staff

253 • Explanation in Anthropology (4) Erasmus
Seminar discussions of articles on religion, peasantry, functionalism and culture change. Students trained to analyze research objectives and explanatory procedures of anthropologists and to write forceful, brief critiques.

254 • Ethnohistory (4) Staff

269 • Area Studies in Anthropology (4) Staff
May be taken for credit as often as available from different professors emphasizing different regional areas.

270A • Problems in African Ethnology (4) Brokensha
Seminar in selected problems in ethnology of Africa.

270B • Problems in Far Eastern Ethnology (4) Staff
Seminar in selected problems in ethnology of the Far East.

270C • Problems in Southeast Asian Ethnology (4) Brown
Seminar in selected problems in ethnology of Southeast Asia.

270D • Problems in South Asian Ethnology (4) Mines
Seminar in selected problems in ethnology of South Asia.

270E • Problems in Middle Eastern Ethnology (4) Staff
Seminar in selected problems in ethnology of the Middle East.

270F • Problems in Oceanic Ethnology (4) Harding
Seminar in selected problems in ethnology of Oceania.

270G • Problems in Latin American Ethnology (4) Staff
Seminar in selected problems in ethnology of Latin America.

280 • Physical Anthropology (4) Staff

281 • Current Problems in Physical Anthropology (4) Staff
To develop student's sense of problem and critical faculties. Comprehensive reading lists and discussions.

282 • Physical Anthropology of North American Indians (4) Staff
Physical variation in indigenous North American populations; methods and theory in analysis; implications for the peopling of the New World. Combined lecture and seminar format.

596 • Directed Reading and Research (2-6) Staff
Individual tutorial.

597 • Individual Study of Master's Comprehensive and Ph.D. (2-6) Staff
Individual tutorial.

599 • Ph.D. Dissertation Preparation (2-6) Staff
Individual tutorial.

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*See also L-2 for 198/199 independent studies unit limitations.

Art

Professors

Kurt Baer, Ph.D., USC; *(Emeritus)*.
Catherine C. Campbell, M.A., Claremont; *(Emeritus)*.
Irma Cavat; painting and drawing.
Mario A. DelChiaro, Ph.D., Berkeley; ancient art.
William E. Dole, M.A., Berkeley; painting and drawing.
[3]*Henri Dorra*, Ph.D., Harvard; 19th and 20th century art.
[1]*Howard C. Fenton*, M.A., UCLA; painting and drawing.
[3]*David S. Gebhard*, Ph.D., Minnesota; historx of architecture.
Jacob Lindberg-Hansen, M.A., Claremont; *(Emeritus)*.
Alfred Moir, Ph.D., Harvard; baroque art.
Robert C. Thomas, M.F.A., California College of Arts and Crafts; sculpture.
Howard R. Warshaw; painting and drawing.

Associate Professors

[3]*Michael A. Arntz*, M.A., CSU, Long Beach; ceramic sculpture.
Larry M. Ayres, Ph.D., Harvard; medieval art.
[1]*Gary H. Brown*, M.F.A., Wisconsin; painting and drawing.
Herbert M. Cole, Ph.D., Columbia; African, Oceanic, American Indian art.
Steven M. Cortright, M.A., Stanford; printmaking.
Beatrice Farwell, Ph.D., UCLA; 19th and 20th century art.
Sheldon A. Kaganoff, M.F.A., Claremont; ceramics.
Bruce S. McCurdy, M.F.A., Yale; printmaking (Department Chairman).
Peter T. Meller, Ph.D., Budapest; Renaissance art.
Prudence R. Myer, Ph.D., Radcliffe; Oriental art.
Conway J. Pierson, M.F.A., California College of Arts and Crafts; ceramics.
William R. Ptaszynski; painting and drawing.
William A. Rohrbach, M.A., Berkeley; painting and drawing.
James D. Smith, Ph.D., Oregon; art education.
[4]*Miles A. Varner*, M.F.A., Rhode Island School of Design; sculpture.

Assistant Professors

Richard C. Dunlap, M.F.A., Washington; painting and drawing.
Michael J. Dvortcsak, M.F.A., UCSB; painting and drawing.

Lecturers

Corlette R. Walker, Ph.D., Bryn Mawr; 18th and 19th century art.

Concerns of the department

The undergraduate program in art is directed toward a B.A. degree in either Art History or Studio and includes courses in both areas. It is designed primarily to serve three purposes: to provide the undergraduate with a thorough and comprehensive basic training in art as a humanistic activity; to provide students who wish to become practicing artists with the foundations which will prepare them for graduate work and professional schools; and to offer basic training to students who look forward to graduate training as professional historians of art or critics.

The major in art requires the completion of the general education requirements. **Art majors may not fulfill General Education Requirement "Area C" with art courses.** The major also requires certain basic Lower Division courses as prerequisites to more advanced work. Within the major, students choose an emphasis in painting, in sculpture, in printmaking, in ceramics, in mass media/fine arts or in the history of art. It is recommended that all art majors take Philosophy/**136 • Aesthetics.**

Art majors who plan to enter the teaching field at the junior high and senior high levels are encouraged to select a studio emphasis, rather than art history. They are further advised to choose a wide range of courses covering as many areas in studio as possible.

For further details regarding course offerings, check with Art Department office.

Exceptions to art departmental requirements may be made by petition through the Art Department Office.

Bachelor of Arts — Art History emphasis

Preparation for the major

Required 23 units in lower division courses: Art/ 6A—B—C; (12 units), and eight units of Art/1, or 6D or 6E or 6F, or 7A and three units of any one of the following studio courses: Art/10, 12, 14, 11, 18, 19A, 19B, or 19C. (The latter may be taken P/NP). Also required: History Dept. courses 4A, B and C, (12 units).

Upper Division major

Satisfactory completion of 40 units in Upper Division courses: 152F; one course each from: 153 series; 155-156 series; 157-158 series; 159-160 series; one course in either the 151, 161, 181, 182 or 183 series and 16 units of Upper Division art history electives.

For the present, art history majors will demonstrate reading competence in one of the following languages: French, German, Italian or Spanish; or, complete course three in one of those languages (or equivalent).

Bachelor of Arts — Art Studio emphasis

Preparation for the major

Required 29 units in Lower Division courses; six courses from Art/10, 12, 14, 16, 18, 19A or B or C (18 units); Art/30 (three units); Art/6 Series (8 units). Also required: eight units of courses in the History Department (recommended 4A or B or C).

Upper Division major

Satisfactory completion of 32 units from courses Art/100, 105, 110, 114, 115, 119, 120 or 190 (Art/190 and 119 must be taken with consent of instructor). Twelve units of art history (four of which may be Lower Division). Upper Division studio majors must declare an emphasis in painting, sculpture, printmaking, ceramics, or fine arts/mass media. Completion of the emphasis requires four courses within one of these areas.

[1] Absent on Leave Fall 1975
[2] Absent on Leave Winter 1976
[3] Absent on Leave Spring 1976
[4] 1975-76

Studio Majors may take any eight units of art history requirements P/NP.

The studio courses may include combinations of subjects and media and will be defined in a syllabus which will be available to the student through the Art Department office. In this syllabus each faculty member will describe how the class will be conducted, what kinds of ideas or problems will be covered, what materials the students will work with, etc. This will be an attempt to clarify the content of each faculty studio course so that students will have a more meaningful basis by which to choose classes.

The Art Department recommends that four additional units of Upper Division art history electives be taken by those students with a studio emphasis who plan to enter a graduate school. In studio classes, the Department requires three hours of work each week for each unit of credit.

Master of Arts

Requirements

Applications for teaching assistantships must be received in the Graduate Division by February 15.

1. Candidates usually present a bachelor's degree in art with the emphasis in the history of art and with at least a "B" average, and will comply with the requirements listed in the *Graduate Division Announcement.*

2. A reading knowledge of one, or two at the option of the department, of the following languages must be demonstrated: French, German, Spanish, Italian, Japanese, Chinese, Greek, or Latin. The language or languages selected for examination must be instrumental to the candidate's field of specialization. Students will be required to take the ETS language examination preferably during their first quarter, or obtain a B in a second-quarter UCSB course. The requirements should be completed before the end of the first year.

3. The student may opt for the University's Plan I or Plan II.

Plan I: a minimum of 30 units and thesis. At least 16 units must be graduate seminars in art history; of these, at least eight units must be in two fields outside the student's major field. These fields are: *Primitive, Pre-Columbian, Asian, Ancient, Early Christian and Medieval, Renaissance, Baroque and Rococo, Nineteenth and Twentieth Centuries, Art of the United States and Architecture.* The remainder must be taken in Upper Division undergraduate courses and graduate courses approved by the individual and graduate advisers. The student must also present a thesis demonstrating familiarity with the available literature on the chosen topic and the ability to make a lucid and scholarly presentation.

Plan II: a minimum of 36 units to be approved by the individual and the graduate adviser and a comprehensive examination. At least 18 units must be taken in graduate courses (16 of these units must be graduate seminars in art history; 2-6 units may be taken in reading course 596MC).

The comprehensive examination will require familiarity with the whole range of art history as represented in standard survey texts; a general knowledge of two minor fields and more detailed knowledge of a major field of specialization. (See list of fields above). With the approval of the specialist in the field, the student's individual adviser and the graduate adviser a broad major field may be split into two parts, the second portion serving as a minor field.

4. Candidates demonstrating an exceptional ability, such as would be expected of a student continuing for a Ph.D., may be awarded honors by the Department.

5. Students under Plan I must have completed their thesis, and students under Plan II passed their comprehensive examination, after being registered for no more than seven quarters and no later than four calendar years after enrolling in the program.

Master of Fine Arts

Requirements

Because of the restricted enrollment and selective nature of the Master of Fine Arts program applications for admission will be accepted for the Fall Quarter only. A slide portfolio, * complete applications for admission and teaching assistantships and related required material must be received in the Graduate Division by February 15. No applications will be accepted for Winter or Spring Quarter admission.

1. In addition to fulfilling the general requirements for admission to graduate status, the department requires a Bachelor of Arts in art or its equivalent, with a superior record. The applicant must demonstrate outstanding accomplishment as a student artist by submitting slides of student work. Admission to the program is contingent upon sponsorship by a faculty member who will serve as Chairman of the Committee and who will assist the Student in selecting the remaining members of the Committee. In this way the tutorial form typifying the program is established and it is understood that the student will be primarily, but not exclusively, instructed by the sponsor.

2. One of five emphases must be indicated: Painting, Sculpture, Printmaking, Ceramics or Fine Arts Mass Media. A minimum of 54 quarter units is required, half of which (27 units) must be studio courses in the 500 series and 12 of which must be art history courses (Upper Division 100 series are acceptable and may be taken P/NP). A maximum of 18 units in addition to the required 54 may be taken (not mandatory) in order to complete the MFA thesis-project — course 593MS. It is expected that all graduate students complete 4.5 hours of work per week for each unit of credit. Two years residency are required.

3. After completing the first year (approximately 20-30 units) the student will present work for review by the Committee, which will report to the Department Chairman and Graduate Adviser. This review will determine which beginning students will be eligible for advancement to Candidacy.

4. It is the student's responsibility to consult the sponsor, meet with the Committee, and with them to establish a project in a special area to be completed in the second year in the program. The project will consist of a group of related works in the student's emphasis, and upon completion, will be presented in the form of a one or two-person exhibition in the Art Galleries. It will be accompanied by one copy of a bound booklet containing slides of the project, preceded by a written statement, the length and content of which will be left to the candidate with the assent of the Committee. This booklet will become a permanent part of the Art Department library.

5. It is the responsibility of the Chairman of the student's Committee to call frequent meetings of the Committee to supervise the student's

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* The portfolio, which is sent directly to the Art department, will consist of 12-20 slides related to the area of specialization and a typed 8½" x 11" information sheet describing the size, material and date of execution of the work. The applicant's name, an identification number and arrow indicating "UP" should be inscribed on each slide mount. Portfolio's will be returned soon after April 15.

work; report progress and, finally, the successful completion of the aforementioned requirements to the Graduate Program Study Committee.

6. There is no foreign language requirement for the degree.

Doctor of Philosophy

Requirements

1. Candidates for admission to the program must have obtained a Master's degree (with Departmental honors) from UCSB, or show evidence of having met similar requirements at other institutions. Rarely, candidates who have only a Bachelor's degree are admitted.

2. Students from other institutions take an exploratory examination to test their general knowledge during their first quarter of attendance.

3. Students will normally take 36 units of seminars and reading courses (or equivalent) recommended by the student's adviser. Seminars taken for credit towards M.A. can be counted towards fulfilling the 36 units required. Students who have shown weaknesses in their exploratory examination are usually required to take additional courses.

4. Students are expected to demonstrate their ability to write a long paper of a scholarly nature during the first year of the program. This requirement can be satisfied by submission of their Master's thesis, or a seminar paper, or a paper especially written for this purpose. The paper will be read by the student's adviser and one other faculty member appointed by the Chairman.

5. The student must demonstrate a proficiency in German and French, and, in some fields, in another language related to the major field. Language examinations will be given at the end of the first year.

6. The faculty will review the work of each student at the end of the first calendar year and may recommend withdrawal.

7. On the recommendation of the student's adviser and the Graduate Adviser, but no later than ten quarters or a maximum of four calendar years after the start of the program (proportionately more if the student is enrolled on a part-time basis), the student applies for advancement to candidacy. At this time the student submits an outline of a proposed dissertation and research program to the Graduate Adviser.

8. The student then takes two examinations:

a. A written examination in two minor fields, one related to the student's major field, and the other unrelated to it. This examination will be administered by members of the department. It can only be taken twice. Upon passing this examination, the student will be allowed to take:

b. The oral qualifying examination administered by three members of the department and two members of other departments appointed by the Graduate Council, forming the doctoral committee.

9. The dissertation carried out under the director of the doctoral committee, must be an original contribution to the field of art history. The candidate must defend it orally before the doctoral committee.

10. The dissertation must be submitted no later than five calendar years after advancement to candidacy.

Career opportunities

Art History majors: The major in art history prepares students for careers in teaching, research, art administration, art criticism, historic preservation, journalism, and museum and gallery professions.

Art Studio majors: The major in art is pre-professional training for careers in teaching or as practicing artists in the Fine Arts.

Teaching credentials

Students who complete a major in studio art may be eligible to pursue a California teaching credential. As part of the admission procedures to the single subject teaching credential program an applicant is required to *attend an interview and present a portfolio*.

A pre-professional volunteer program is available through the Art Department to art majors interested in gaining tutorial and teaching assistance experiences in a local school district. A handbook on student teaching is available for use in the Art Department office. Applicants are advised to consult the Departmental Credential Adviser.

Successful completion of the M.A. or M.F.A. degree is required for issuance of the Community College Instructors Credential. Students interested in this credential and the related professional preparation (which is optional) should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter in the year in which the advanced degree will be completed. Specific details of State and University of California, Santa Barbara requirements for the credential program are available from the Graduate School of Education.[1]

Correspondence information

Department of Art, Art Building, Rm 1316, University of California, Santa Barbara, California 93106. Phone: (805) 961-3138.

Studio Art

Yearly schedule varies — Check with department.

Lower Division courses

Courses 10, 12, 14, 16, 18 and 19 series may be repeated for credit up to six units. Department requires a repeat from a different instructor. Exceptions require Instructor's permission.

Freshmen Seminars

To be offered on an irregular basis. For additional information see Department.

10 • Lower Division Painting (3) Staff
Designed for Majors. Introductory problems in various painting media such as water color, acrylic and oils. Fundamentals of color theory and composition. Techniques on various supports, grounds and paint application.

12 • Lower Division Sculpture (3) Thomas, Varner
Designed for Majors. An introduction to sculptural problems and techniques dealing with traditional spatial concepts. Emphasis will be on a variety of sculptural materials used to realize these concepts.

14 • Lower Division Printmaking (3) Cortright, McCurdy
Designed for Majors. Recommended preparation: 3 units of Art 18. Introduction to printmaking; emphasis on technical fundamentals and conceptual aspects of graphic arts. Processes of intaglio and lithographic printing will be emphasized.

16 • Lower Division Ceramics (3) Arntz, Kaganoff, Pierson
Designed for Majors. Introduction to clay as a medium with emphasis on form. Lectures on clays, clay bodies, glazes and a general survey of ceramics history. Techniques of throwing, handbuilding, glazing and firing will be covered.

18 • Lower Division Drawing (3) Staff
Designed for Majors. Introductory problems in two-dimensional representation with various drawing media, including structural and symbolic implications of the human form. Emphasis on organization of vision and thought in terms of drawing techniques and materials.

19A • Lower Division Photography (3) Staff
Designed for Majors. Exploration of photography as a means

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[1] See inside front cover for address.

of artistic expression and showing its relationship to other art media.

19B • Lower Division Film Techniques (3) Staff
Designed for Majors. Introduction to various cinematic processes including film and video-tape.

19C • Lower Division Experimental Projects (3) Staff
Designed for Majors. Study and use of new and advanced materials and techniques including those reflecting contemporary technological developments in science and industry.

21 • Beginning Painting (3) Staff
For non-majors only. Composition in color; various media.

24 • Beginning Drawing (3) Staff
For non-majors only. Drawing in various media including the use of the human figure.

25 • Beginning Ceramics (3) Arntz, Kaganoff, Pierson
For non-majors only. Fundamentals and techniques of ceramics.

30 • Studio Concepts (3) Staff
Designed for Majors. Analysis of art principles as relative to studio practice and visual perception. Course examines underlying philosophies of artists and broad cultural trends demonstrated in artistic styles.

Upper Division courses

The specific concepts, techniques and philosophy of teaching in courses 100 through 120 will vary according to the individual instructor. A syllabus of each instructor's courses will be available in the Art Department Office

Courses 100, 105, 110, 114, 115, 119 and 120 may be repeated for credit.

100 • Upper Division Painting and/or Drawing (4) Staff
Prerequisite: 3 units of Art/10 or 18. Problems emphasizing development of personal expression in painting and drawing; various media. Consideration given to historical painting; trends of contemporary painting and relationship of drawing to painting. May be repeated more than once in a quarter, but must be from a different instructor.

105 • Upper Division Sculpture (4) Thomas, Varner
Prerequisite: 3 units of Art/12. First year: more complex spatial problems: working with a limited number of sculptural materials with emphasis on competency in handling two of these materials. Second year: advanced work in sculptural media; concentration on development of personal sculptural ideas. May be repeated more than once in a quarter, but must be from a different instructor.

110 • Upper Division Printmaking (4) Cortright, McCurdy
Prerequisite: 3 units of Art/14. Problems in printmaking including advanced technical processes and color in intaglio and lithographic printing. Emphasis on developing individual competency, both technically and conceptually, through assigned projects and supervised independent study. May be repeated more than once in a quarter, but must be from a different instructor.

114 • Fine Arts—Mass Media (4) Warshaw
Prerequisite: 6 units of Art/18 and consent of instructor. Offset lithography as a technique for the creation of original graphic works of art. May be repeated for credit.

115 • Upper Division Ceramics (4) Arntz, Kaganoff, Pierson
Prerequisite: 3 units of Art/16. Investigation at an individual level of raku, low fire, salt and high fire range. Lectures and problems relating to technical aspects of ceramic chemistry. Personal control of form from clay body, fabrication, glazing, to and including firing. May be repeated more than once in a quarter, but must be from a different instructor.

119 • Media for Visual Communication (4) Smith
Prerequisite: consent of instructor. A laboratory course stressing experimentation, creation and use of multi-image projection materials. May be repeated for credit.

120 • Upper Division Photography (4) Ptaszynskì, Rohrbach
Prerequisite: 3 units of Art/19. Exploring photography as artistic expression and its relationship to other art media. May be repeated for credit.

190 • Senior Project (4) Studio Faculty
Prerequisites: Completion of at least 6 UD studio courses (24 units). Permission of instructor and chairman of department, by petition. Advanced study to be taken with the consent of a faculty member within the area of emphasis and with whom the student has worked at least one quarter previously. The project will stress the culmination of the student's development as an undergraduate.

194 • Special Group Studies (2-4) Staff
Prerequisites: Qualified UD students and consent of instructor and chairman of department. A means of making special studies or meeting special curricular problems. No more than 4 units per quarter and 12 units total may be taken "in lieu" of major requirements. Limited to groups of 3-12 persons.

***199 • Independent Studies** (1-5) Staff
Prerequisites: Consent of instructor and previous completion of 84 units. Advanced individual problems. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Art History

Yearly schedule varies — Check with department.

Lower Division courses

1 • Introduction to Art (4) Staff
A study of art as a medium of expression

6A • Art Survey I Ancient Art (4) Del Chiaro
From the Stone Age to the end of the Roman Empire.

6B • Art Survey II Medieval Art (4) Ayres
From the Early Christian Period to the Renaissance.

6C • Art Survey III Renaissance-Modern Art (4) Moir
From the Renaissance through Modern Art.

6D • Survey-Asian Art (4) Myer
The Arts of India, China and Japan.

6E • Survey-Exotic Arts (4) Cole
A conceptual, cross-cultural introduction to Amerind, Eskimo, African, and Oceanic Arts: Artists, sculpture, festivals, body decoration, masking, architecture, and painting will be seen in the context of social and religious values. Films, slides and museum tours.

6F • Survey-Architecture and Planning (4) Gebhard
The architect and planner in history; technical and formal means used; individual buildings and urban plans from the past to the present will be used as examples.

7A • Politics in Art Since 1800 (4) Walker
Rise of the Avant-Garde in art and revolutions.

Upper Division courses

150 • Art in the Modern World (4) Walker
Prerequisite: Upper Division standing. For Non-Majors only or consent of instructor. An examination of art of the last 100 years. Treats painting, architecture, and sculpture in a manner that emphasizes the social, economic and cultural background.

151C • Arts of the South Seas (4) Cole
Prerequisite: Upper Division standing. An introduction to masking, sculpture, festivals, body decoration and architecture of Melanesia, Micronesia and Polynesia, stressing the relationship of art to life.

151D • North American Indian Arts (4) Cole
Prerequisite: Upper Division standing. A survey of the prehistoric and ethnographic Indian and Eskimo arts: Emphasis on social, ceremonial, and religious contexts of masks, dress, sculpture, painting, architecture, pottery, and basketry. Films, slides, and museum visits.

151F • African Art—I (4) Cole
Prerequisite: Upper Division standing. The relationship of art to life in sub-Saharan Africa. A cross cultural survey of types, styles, history, and values of arts ranging from personal decoration to the state festivals, stressing Ashanti, Ife, Benin, Yoruba, Cameroon.

151G • African Art—II (4) Cole
Prerequisite: 151F or consent of Instructor. Upper Division standing. An in-depth continuation of 151F in a Seminar/discussion format. Selected topics in masking, figural sculpture, etc. and emphasis on African contexts of ritual and social life.

151H • The Art of Festivals (4) Cole
Prerequisite: Upper Division standing. An examination of African, Oceanic, and American Indian festivals and rituals as works of art; structural and functional analyses of ceremonies recorded on film and video-tape. Emphasis on the aesthetic interaction of dance, music, gesture, and the visual arts.

152A • Ancient Art: Egypt (4) Del Chiaro
Prerequisite: Upper Division standing. Recommended preparation: 6A. The architecture, sculpture and painting of ancient Egypt from prehistoric through Roman times.

152B • Ancient Art: Mesopotamia and Iran (4) Del Chiaro
Prerequisite: Upper Division standing. Recommended preparation: 6A. The architecture, sculpture and painting of ancient Mesopotamia and Iran.

152D • Ancient Art: Aegean Art (Bronze Age in Greece and the Aegean) (4) Del Chiaro
Prerequisite: Upper Division standing. Recommended preparation: 6A. The architecture, sculpture and painting of the Greek mainland and the Greek Aegean islands from prehistoric times to the Iron Age, ca. 1100 B.C.

152E • Ancient Art: Greece I (1100—500 B.C.) (4) Del Chiaro
Prerequisite: Upper Division standing. Recommended preparation: 6A. The architecture, sculpture and painting of ancient Greece from the Iron Age (Geometric Period) to the beginning of the fifth century Classical Period; emphasis on the Archaic Period.

152F • Ancient Art: Greece II (500—30 B.C.) (4) Del Chiaro
Prerequisite: Upper Division standing. Recommended preparation: 6A, 152E. The architecture, sculpture and painting of ancient Greece from the fifth century Classical Period through the Hellenistic Age to the advent of the Roman Empire.

152G • Ancient Art: Ancient Italy (4) Del Chiaro
Prerequisite: Upper Division standing. Recommended preparation: 6A, 152E and F. The architecture, sculpture and painting of ancient Italy from prehistoric times through the Etruscans; emphasis on the Etruscans.

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*See L-2 for 198/199 independent /studies unit limitations.

152H • Ancient Art: The Roman Empire (4) Del Chiaro
Prerequisite: Upper Division standing. Recommended preparation: Art/6A, 152G. The architecture, sculpture and painting of the Roman Empire from 30 B.C. to the beginning of the Christian Era, ca A.D. 325.

153A • Medieval Art: Early. (4) Ayres
Prerequisite: Upper Division standing. Architecture, sculpture, painting and the minor arts of the Early Middle Ages in Western Europe from the fourth to the eleventh century.

153B • Medieval Art: Byzantine (4) Ayres
Prerequisite: Upper Division standing. Architecture, sculpture, painting and the minor arts of the Byzantine world from 330 to 1453 A.D.

153C • Medieval Art: Romanesque (4) Ayres
Prerequisite: Upper Division standing. Architecture, sculpture and painting of the Romanesque period in Western Europe from 1050 to 1400 A.D.

153D • Medieval Art: Gothic (4) Ayres
Prerequisite: Upper Division standing. Architecture, sculpture and painting of the Gothic period in Western Europe from 1150 to 1400 A.D.

153E • Medieval Art: Italy, 13th and 14th Centuries (4) Ayres
Prerequisite: Upper Division standing. The emergence of humanistic and civic ideas in the art of the Italian Trecento and Quattrocento. A survey of large civic programs of secular and secularized ecclesiatical art of the two centuries. Sculpture, architecture and painting will be discussed.

153F • Gothic Painting 1200-1400 (4) Ayres
Prerequisite: Upper Division standing. The origins and development of Gothic painting in France, England, and the Lower Rhineland with special reference to Parisian manuscript illumination and to the influence of Italian art in the North during the fourteenth century.

154B • Pre-Columbian Art of South America (4) Staff
Prerequisite: Upper Division standing. The architecture, sculpture, ceramics, textiles and metalwork of the Andean civilizations from 3000 B.C. to 1532 A.D. will be examined from the technical, formal iconographical standpoints.

154C • Pre-Columbian Art of Mexico and Central America (4) Staff
Prerequisite: Upper Division standing. The course will treat all of the arts of the Mesoamerican civilizations from 1500 B.C. to 1520 A.D. with emphasis on the growth of formal traditions and the symbolism they carried.

155B • 15th Century Painting in Northern Europe. (4) Meller
Prerequisite: Upper Division standing. Painting in France, Flanders and Holland.

155C • Renaissance Art in Fifteenth Century Italy 1400—1450 (4) Meller
Prerequisite: Upper Division standing. Fifteenth century painting, sculpture and architecture in Italy, principally Florentine from 1400-1450.

155D • Renaissance Art in Fifteenth Century Italy 1450-1500 (4) Meller
Prerequisites: 155A. Upper Division standing. Fifteenth century painting, sculpture and architecture in Italy, principally Florentine from 1450-1500.

156A • Italy: High Renaissance (4) Meller
Prerequisite: Upper Division standing. Roman and Florentine painting, sculpture and architecture from Leonardo to the sack of Rome.

156B • Sixteenth Century Art in Northern Europe (4) Staff
Prerequisite: Upper Division standing. Bosch and Bruegel; eccentrics, moralists and mannerists of 16th century Northern Europe.

156C • Mannerism (4) Moir
Prerequisite: Upper Division standing. Analysis of the pan-European style of Mannerism in architecture, painting and sculpture.

156D • Venetian Painting (4) Meller
Prerequisite: Upper Division standing. The evolution of Venetian painting from Jacopo Bellini to Jacopo Bassano.

156E • Michelangelo (4) Meller
Prerequisite: Upper Division standing. The study of the sculpture, painting, architecture and drawings of Michelangelo.

157A • Baroque Painting in Italy (4) Moir
Prerequisite: Upper Division standing. Baroque painting in Italy during the seventeenth and early eighteenth centuries.

157B • Italian Baroque Architecture and Sculpture (4) Moir
Prerequisite: Upper Division standing. A study of the works of the major architects and sculptors active in Italy from the beginning of the seventeenth century until early eighteenth century.

157C • Northern Baroque Art (4) Moir
Prerequisite: Upper Division standing. Architecture, sculpture and painting in Flanders, Holland and France; seventeenth and early eighteenth centuries.

157D • Caravaggio and His Followers (5) Moir
Prerequisites: Art/6C. Open only to UD Art History majors and Graduate Students. Lectures on Caravaggio and the dissemination of his style; analysis of literary sources; discussion of problems of connoisseurship, attribution, and iconography, and copyists; reconstruction of lost works.

158A • Eighteenth Century Art: 1685—1750 (4) Walker
Prerequisite: Upper Division standing. Painting, Sculpture and Architecture in Europe. Course will also emphasize the International character of Rococo.

158B • Eighteenth Century Art: 1750-1810. (4) Walker
Prerequisite: Upper Division standing. Painting, sculpture and architecture in Europe from 1760—1810. The course will emphasize the theories underlying these interrelated movements, e.g. Primitivism, Exoticism, Historicism.

159A • Art in 19th Century Culture I (4) Dorra
Prerequisite: Upper Division standing. Major trends from Goya through Courbet.

159B • Art in 19th Century Culture II (4) Dorra
Prerequisite: Upper Division standing. Impressionism, Post-impressionism, the Nabis, Art Nouveau.

159C • Nineteenth Century Architecture (4) Gebhard
Prerequisite: Upper Division standing. European and American planning and architecture from 1790 through 1914. Neo-Rationalism to the beginning of the "Early Modern Movement." The course will treat the relationship between theory, structure, form and practice during the nineteenth century.

159D • Nineteenth Century Art in England (4) Staff
Prerequisite: Upper Division standing. English art from 1800 to 1900. Primary emphasis will be on English painting and its relation to nineteenth century continental art. Architecture and sculpture will also be considered.

160A • 20th Century Architecture (4) Gebhard
Prerequisite: Upper Division standing. European and American architecture from 1920 to the present, Expressionism, the International Style, "Period" architecture, the Moderne and the Post World War II movements. The relationship between architecture, design, painting and the political and social scene during these decades.

160B • Art in 20th Century Culture I (4) Dorra
Prerequisite: Upper Division standing. Fauvism, Cubism, Futurism, Expressionism and Surrealism.

160C • Art in 20th Century Culture II (4) Dorra
Prerequisite: Upper Division standing. Surrealism and its aftermath; geometric abstraction; abstract expressionism; developments of the sixties throughout the world (op, pop, kinetic, systemic, minimal, conceptual, etc.)

161A • American Art I (4) Walker
Prerequisite: Upper Division standing. American art, including architecture, sculpture and painting before the Armory Show, 17th century through 19th century.

161B • American Art II (4) Farwell
Prerequisite: Upper Division standing. Survey of American Art from the Armory Show to the present, with major emphasis on development in painting and sculpture after World War II.

161C • Art in Colonial Spanish America (4) Staff
Prerequisite: Upper Division standing. Architecture, sculpture, painting and minor arts produced in the Spanish possessions, especially Mexico and Peru, from 1620 to 1820. The development of local tendencies and the relations to European art will be stressed.

161D • Hispanic-American Arts (4) Staff
Prerequisite: Upper Division standing. The arts of Latin America from the seventeenth to the twentieth century; the flowering of regional and provincial schools; Neo-Classicism, and the development of modern forms in the international styles.

161E • Modern Mexican Painting (4) Staff
Prerequisite: Upper Division standing. Emphasis on the social-realist art of the muralists Rivera, Orozco and Siqueiros.

163B • Spanish Arts—Renaissance to Modern (4) Staff
Prerequisite: Upper Division standing. Fusion of local Spanish types with the Renaissance. Development of Baroque, Neo Classic and the emergence of ninteenth and twentieth century forms. Studies in architecture, sculpture, painting and the minor arts.

164A • The Landscape (4) Moir
Prerequisite: Upper Division standing. What Western European artists from the Renaissance to the present have seen in their physical environment (mainly rural but also urban), how they have recorded it, and what it means. Reading, field trips, discussion, papers.

164B • The History of Rome as a Modern City (4) Moir
Prerequisite: Upper Division standing. A study of the evolution of the urban structure of Rome from the Renaissance to the present. The emphasis will be on the city as an evolving formal entity rather than on individual buildings or on urban sociology.

164C • Museum Practices & Techniques (4) Dorra
Prerequisites: Upper Division standing. Consent of instructor. Discussion of various aspects of museum work: Management principles, the cataloguing and care of art objects, exhibitions and acquisitions, administrative procedures,

museum architecture. Specialist lecturers and visits of museums and their facilities. Limited enrollment.

165A • Theories of Architecture (4) Gebhard
Prerequisite: Upper Division standing. An historical analysis of the relationship between architectural theories and architecture and urban planning from the fifteenth through the twentieth century.

165B • Islamic Architecture (4) Gebhard
Prerequisite: Upper Division standing. Islamic architecture of North Africa; of the Near and the Middle East from the eighth through the eighteenth century.

166A • The Minor Arts (4) Staff
Prerequisite: Upper Division standing. An historical survey of selected minor arts.

167A • Caricature, Cartoon and Pictorial Satire to 19th Century (4) Staff
Prerequisite: Upper Division standing. The origins and development of satire, caricature and comic strip in the graphic arts from the Reformation to the 19th century.

167B • Caricature and Cartoon of the 20th Century (4) Staff
Prerequisite: Upper Division standing. Recommended preparation: 167A Proliferation of cartoon and comic strip in modern society.

168A • The History of Graphic Art (4) Staff
Prerequisite: Upper Division standing. A survey of the history of fine prints since the invention of printmaking in the 15th century to the present. Different types of printmaking will be discussed and such great masters as Durer, Rembrandt, Goya, Daumier and Picasso.

169 • Analysis (4) Farwell
Prerequisite: Upper Division standing. This course is strongly recommended as an elective for those students contemplating professional work in art history. The study of artistic form and visual perception as a tool for the art historian's study of style and expression.

181 • The Art of India (4) Myer
Prerequisites: Art/6D or permission of instructor. Upper Division standing. The rise and development of native styles in architecture, sculpture and painting, with emphasis on Hindu and Buddhist problems.

182A • Early Chinese Art (4) Myer
Prerequisites: Art/6D or permission of instructor. Upper Division standing. Native traditions and foreign influences in the development of Chinese art from prehistoric times through the ninth century.

182B • Later Chinese Art (4) Myer
Prerequisites: Art/6D or permission of instructor. Upper Division standing. Chinese art from the tenth to the eighteenth century, with emphasis on painting and the minor arts.

183 • The Art of Japan (4) Myer
*Prerequisites: Art/6D or permission of instructor. Upper Division standing.*Native traditions and foreign influences in the development of Japanese architecture, sculpture, painting and minor arts.

184 • High Culture Art of SE Asia (4) Staff
Prerequisite: Upper Division standing. An introduction to the Hindu-Buddhist arts and architecture of Southeast Asia; areas covered will include Cambodia, Thailand, Vietnam, Laos, Indonesia and Malaysia.

194 • Special Group Studies (2-4) Staff
Prerequisites: Qualified Upper Division students and consent of instructor and chairman of department. A means of making special studies or meeting special curricular problems. No more than 4 units per quarter and 12 units total may be taken "in lieu" of major requirements. Limited to groups of 3-12 persons.

***199 • Independent Studies** (1-5) Staff
Prerequisites: Consent of instructor and previous completion of 84 units. Advanced individual problems. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate courses

240 • Graduate Ceramics (2-9) Arntz, Kaganoff, Pierson
Prerequisite: Graduate standing. Special problem seminar in ceramics. May be repeated for credit with no cumulative unit limit.

250A • Methods and Techniques in Art History Research (4) Moir
Prerequisite: Graduate standing. Reading, and a series of discussions and research problems designed to give the student understanding of the different approaches to historical study of works of art.

250B • Connoisseurship (4) Moir
Prerequisite: Graduate standing. Reading, discussion and practical experience in qualitative analysis of works of art, with particular emphasis on drawings, prints and medals.

250C • Art Criticism (4) Staff
Prerequisite: Graduate standing. Study of approaches, methods and objectives of art criticism.

251A • Seminar on African Masks (4) Cole
Prerequisite: Graduate standing. Special research in African art.

251B • Seminar on African Arts in Context (4) Cole
Prerequisite: Graduate standing. Special research in African art.

251C—D • Seminar in Non-Western Arts (4-4) Cole
Prerequisite: Graduate Standing. A continuous, two quarter seminar on selected topics in African, Oceanic, and/or American Indian Arts. Individual quarters may not be taken separately for credit. Specific course focus announced before course begins.

252 • Seminar in Ancient Art. (4) Del Chiaro
Prerequisite: Graduate standing. Special research in ancient art.

253 • Seminar in Medieval Art (4) Ayres
Prerequisite: Graduate standing. Special research in medieval art.

254 • Seminar in Pre-Columbian Art. (4) Staff
Prerequisite: Graduate standing. Special research in pre-Columbian art.

255A—B • Seminar in Renaissance Art. (4,4) Meller
Prerequisite: Graduate standing. Special research in Renaissance art. A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

255C • Seminar in Renaissance Art (4) Meller
Prerequisite: Graduate Standing. Introduction to the Research Method: problems of the figurative and decorative arts of the Renaissance period.

257 • Seminar in Baroque Art (4) Moir
Prerequisite: Graduate standing. Special research in baroque art.

258A • Seminar in Eighteenth Century Art. (4) Staff
Prerequisite: Graduate standing. Special research in eighteenth century art with special emphasis on painting and prints.

259A—B • Seminar in Nineteenth Century Art (impressionism and Post impressionism) (4,4) Dorra
Prerequisite: Graduate standing. Special research in nineteenth century art. A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

259C • Seminar in Romanticism and Realism (1800-1860) (4) Farwell
Prerequisite: Graduate standing.

260A—B • Seminar in European Art of the Twentieth Century (4,4) Dorra
Prerequisite: Graduate standing. Special research in twentieth century art. A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

260C • Seminar in the Art of the Last Decade (4) Staff
Prerequisite: Graduate standing. Painting and sculpture, 1900-1970, with primary emphasis on American developments.

261 • Seminar in American Art (4) Farwell
Prerequisite: Graduate standing. American painting and sculpture, 1940-1960, with primary emphasis on the formation and development of Abstract Expressionism.

265 • Seminar in Architectural History (4) Gebhard
Prerequisite: Graduate standing. Special research in the history of architecture.

267 • Caricature, Cartoon and Pictorial Satire (4) Staff
*Prerequisite: Graduate standing.*Special research in the history of caricature.

282 • Seminar in Oriental Art (4) Myer
Prerequisite: Graduate standing. Special research in Oriental art.

591A • Directed Study in Art Education (2-9) Smith
Prerequisites: Consent of instructor and Graduate standing. Individual Tutorial.

591C • Directed Study for the MFA in Ceramics (2-9) Arntz, Kaganoff, Pierson
Prerequisites: Graduate standing; consent of instructor. Individual Tutorial.

591DP • Directed Study for the MFA in Drawing and/or Painting (2-9) Studio Faculty
Prerequisites: Graduate standing; consent of instructor. Individual Tutorial.

591MM • Directed Study for the MFA in Fine Art—Mass Media (2-9) Dvortcsak, Warshaw
Prerequisites: Graduate standing; consent of instructor. A reflexive study of graphic ideas using the media offset lithography and video tape. Individual Tutorial.

591PM • Directed Study for the MFA in Printmaking (2-9) Cortright, McCurdy
Prerequisites: Graduate standing; consent of instructor. Individual Tutorial.

591S • Directed Study for the MFA in Sculpture (2-9) Thomas, Varner
Prerequisites: Graduate standing; consent of instructor. Individual Tutorial.

592A • Special Group Studies in Art Education (2-9) Smith
Prerequisites: Graduate standing; consent of instructor. A

*See L-2 for 198/199 independent studies unit limitations.

means of making special studies and meeting special curricular problems.

592C • Special Group Studies in Ceramics (2-9) Arntz, Kaganoff, Pierson
Prerequisites: Graduate standing; consent of instructor and chairman of department. A means of making special studies and meeting special curricular problems.

592DP • Special Group Studies in Drawing and/or Painting (2-9) Studio Faculty
Prerequisites: Graduate standing; consent of instructor and chairman of department. A means of making special studies and meeting special curricular problems.

592PM • Special Group Studies in Printmaking (2-9) Cortright, McCurdy
Prerequisites: Graduate standing; consent of instructor and chairman of department. A means of making special studies and meeting special curricular problems.

592S • Special Group Studies in Sculpture (2-9) Thomas, Varner
Prerequisites: Graduate standing; consent of instructor and chairman of department. A means of making special studies and meeting special curricular problems.

593MS • MFA Thesis Project (2-9) Studio Faculty
Prerequisites: Graduate standing; consent of instructor and chairman of department. Directed study on MFA Thesis Project. Units may not be included in the 54 program units. Overall maximum 18 units.

594 • Special Studies in Studio Art (4) Studio Faculty
Prerequisites: Consent of instructor; Graduate standing. Consent of graduate adviser. A means of making special studies and meeting special curricular problems.

595 • Group Studies (2-6) Art History Faculty
Prerequisites: Graduate standing; consent of instructor and chairman of department. Critical review of research in selected fields.

596 • Reading and Research in Art History (2-6) Art History Faculty
Prerequisites: Graduate standing; Consent of instructor and chairman of department. Individual Tutorial. A written proposal for each tutorial must be approved by the department chairman and filed with the Graduate Division prior to the appropriate quarter. Total units taken not to exceed half of those required for Master's degree.

596MC • Directed Reading and Research in Art History (2-6) Art History Faculty
Prerequisites: Graduate standing; consent of graduate adviser. Readings and study towards comprehensive examination for M.A. For Plan II students only.

597D • Individual Study (1-12) Art History Faculty
Prerequisites: Graduate standing; consent of graduate adviser. Individual study for examination for the Ph.D. degree. Limited to 12 units per quarter and 24 units total. No unit credit allowed toward degree.

598T • Master's Thesis Research and Preparation (1-12) Art History Faculty
Prerequisites: Graduate standing; consent of graduate adviser. Research underlying the thesis; writing the thesis. No credit allowed toward degree. Plan I students only.

599D • Ph.D. Dissertation Preparation (1-12) Art History Faculty
Prerequisites: Graduate standing; consent of graduate adviser. Terminal preparation of the dissertation. Maximum of 12 units total.

Related courses in Education

AS 390 • Curriculum of Instructional Procedures and Materials Used in the Teaching of Secondary Art. (3) Smith
Procedures used in the teaching of Secondary Art.

AS 392 • Student Teaching: Art (1-12) Smith
May be repeated for credit.

AS 393 • Problems Seminar in the Teaching of Art (1) Smith
Prerequisite: Concurrent enrollment in Education/AS 392.

AE 395 • Art Methods for the Elementary School (3) Smith

Asian American Studies

Faculty

Tetsuden Kashima, Ph.D., UCSB; Lecturer in Sociology and Asian American Studies (Chairman).

Concerns of the program

The Asian American Studies Program (1) provides all students with the opportunity to study the unique role of Asian people in contemporary America; (2) offers courses which fulfill the American History and Institutions requirement which also may be applied to the E-2 area of the General Educational requirements for the B.A. and for the B.S. degrees.

It is the purpose of the program of Asian American Studies to provide an understanding of the Asian American experience. The goal is threefold; first, to offer the Asian American students an opportunity to study and understand their heritage and history as an ethnic minority; second, to offer other students an opportunity to enrich their knowledge of the Asian American; and third, to encourage the continual gathering, development, and study of new knowledge regarding Asians in America.

Teaching credentials

A program of study is available in Asian American Studies which relates to providing a background of course work in this field. A major is not available in this area and, therefore, a major is completed in a teaching field for those students who want to obtain a teaching credential.

Requirements for this background in Asian American Studies specify a minimum of 30 units with Asian American Studies/100A, 100B, 110 and 199 required. Selection of additional courses to complete this program should be made from the two categories listed below in consultation with a faculty adviser in Asian American Studies.

American History and Society

At least two courses selected from History/177, 17A, 17B, Political Science/172, Sociology/45, 128, Black Studies/120.

Asian History and Culture

At least two courses selected from Histor/185A, 185B, 187A, 187B, Anthropology/145, Religious Studies/164A, 164B, 166, 167A, 167B, Art/6D, Chinese/112, 140, Japanese/112, 140A, 140B, 140C.

Correspondence information

Asian American Studies Program, South Hall Rm. 5511, University of California, Santa Barbara, California 93106. Phone: (805) 961-2138.

Asian American Studies

Course listings

Upper Division courses

100A • Asian American Experience (4) Kashima
An introduction to the experience of being an Asian in America. Special focus upon historical and sociological analysis of the origins of the Asians in America since 1840.

100B • Contemporary Asian American Experience (4) Kashima
The aim of this course is to present the Asian American experience with emphasis from 1945 to the present. The focus is upon contemporary issues, problems, progress, analysis of situations and possible solutions or outcomes centering around key ideas relating to the Asians in America.

110 • Asian American Communities: Comparative Analysis (4) Kashima
A comparative analysis of the Chinese, Filipino, and Japanese communities in the United States. The course will include as topics: origins, patterns of settlement, social structure, social organization, leadership patterns and inter-ethnic relationships.

***199 • Independent Studies in Asian American Studies** (1-5) Kashima
Prerequisites: Upper Division standing and consent of instructor. To provide special guidance for exceptional advanced students in formulation and execution of independent projects and in writing and presenting the results.

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*See L-2 for 198/199 independent studies unit limitations.

Asian Studies

Program Advisory Committee

(See departmental entries for faculty information.)
Robert L. Backus, Ph.D., Associate Professor of Eastern Languages (Chairman).
Donald E. Brown, Ph.D., Associate Professor of Anthropology.
Chi-yun Chen, Ph.D., Associate Professor of History.
Wilbur M. Fridell, Ph.D., Associate Professor of Religious Studies.
Chauncey S. Goodrich, Ph.D., Associate Professor of Eastern Languages.
Stephen N. Hay, Ph.D., Associate Professor of History.
Immanuel C. Y. Hsu, Ph.D., Professor of History.
Matthew V. Lamberti, Ph.D., Associate Professor of History.
Gerald J. Larson, Ph.D., Professor of Religious Studies.
Alan P. L. Liu, Ph.D., Associate Professor of Political Science.
Mattison Mines, Ph.D., Assistant Professor of Anthropology.
Prudence R. Myer, Ph.D., Associate Professor of Art.
Raimundo Panikkar, D.Sc., Ph.D. Th.D., Professor of Religious Studies.

Concerns of the program

Asian Studies is an interdepartmental program which permits the student to study an Asian area (China, Japan, or India) through two or more academic disciplines, while at the same time requiring at least two years of training in a language relevant to the area of study. The disciplines which contribute the most to Asian Studies are Art, Anthropology, Eastern Languages, History, Philosophy, Political Science, and Religious Studies, while the languages which may be taken in conjunction with Asian Studies courses are Chinese (Mandarin and Classical), Japanese, and Sanskrit. Asian Studies consists of an undergraduate major leading to the B.A. and a graduate program that goes as far as the M.A. Both the major and the graduate program are designed to enable the student to study an Asian area more intensively (through two disciplines) or more extensively (through more than two disciplines) as desired, and to get a good start in a language relating to the area of interest.

Bachelor of Arts

Preparation for the major

In preparation for the major, students must have at least two years (24 units) of an Asian language pertaining to the area of their interest (or else demonstrate an equivalent level of competence), and in addition must take at least eight units of Lower Division work selected from the following: Anthropology/2, 3, 5, Art/6D, Economics/1, 2, Geography/2, History/19, 81, 86, 87, 89, Political Science/40A—B, 45, Sociology/1.

Upper Division major

The major consists of forty units of Upper Division courses selected from two or more disciplines and generally concentrating on one of the three areas of Asian Studies: China, Japan, or India. It is advisable that one of the disciplines be history; and in any case, all majors are required to take four units of Asian history chosen from either the Lower or Upper Division list. Courses for the major may be taken from the following: Anthropology/136, 142, 144, 145, 172, Art/151C, 181, 182A—B, 183, 184, Asian American Studies/100A, Chinese/101A—B—C, 110A—B, 112, 120A—B—C, 122A—B, 124A—B—C, 130A—B—C, 131, 132, 140, Economics/114, Geography/154, 195, History/145A—B, 146A—B, 180, 181, 183, 184, 185A—B, 186A—B—C, 187A—B, 188A—B, 190, 195AS, Japanese/101, 105A—B—C, 110A—B, 112, 120A—B—C, 140A—B—C, Linguistics/120A, Philosophy/123, Political Science/126, 131, 134, 135, 136, 137, 196, Religious Studies/140A—B—C, 149, 150, 155, 159A—B—C—D—E—F—J—K—L, 160, 161, 162, 163, 164A—B, 165, 166, 167A—B, 168, 194 (East or South Asian).

Master of Arts

Students applying for admission to the M.A. program must meet the general requirements for admission to graduate standing. All applicants must submit a letter to the Chairman of the Advisory Committee on Asian Studies describing their preparation for the work in the program and stating the objective they hope to attain by completing the program. Preparation may include an undergraduate degree in a relevant discipline as well as courses dealing with Asia. Moreover, some training in an Asian language is recommended. On the basis of this letter the Committee will decide whether applicants are eligible for the program and whether an inter-disciplinary program is best suited to their needs.

Inquiries regarding admission to the M.A. program in Asian Studies should be sent to Chairman, Advisory Committee on Asian Studies, or Graduate Division, University of California, Santa Barbara, 93106.

Students admitted to the M.A. program may pursue the degree under Plan I or Plan II of the Graduate Division of the University of California, Santa Barbara.

Plan I — Students must complete thirty units of upper-division and graduate work, fulfill the language requirement, and write a thesis. The thirty units include not less than twelve units of graduate work taken in at least two departments.

Courses in one Asian language pertaining to the region of the student's interest must be taken in each quarter (4 units a quarter) until the required units of regular coursework are completed. But in no case will less than twenty-four units of one language (including lower-division units) be accepted as fulfilling the language requirement. Upper-division language units in excess of the minimum twenty-four may be counted up to eight units toward completion of the required units of regular coursework. The language requirement will be waived for a student who comes into the program with sufficient competence in an Asian language to enable its use in regular course work, and will be considered fulfilled at any stage in the program at which the student achieves such competence.

Students will be allowed to choose Plan I only if they are capable of doing some thesis research in an Asian language pertaining to the region of their interest.

The student may choose a thesis adviser, but the finished thesis must be approved by a committee consisting of the thesis adviser and two additional faculty members appointed by the Chairman of the Committee on Asian Studies.

Plan II — The student must complete thirty-six units of upper-division and graduate work, fulfill the language requirement (same as

Plan I), and pass a comprehensive examination. The thirty-six units include not less than eighteen units of graduate work taken in at least two departments.

Students who elect *Plan II* need not have mastered an Asian language to the level where it can be used for research, but must nevertheless demonstrate by at least a "B" average in the language courses that they can deal effectively with the structural and semantic problems of the language and are capable of pursuing this study individually in the future. Students must also demonstrate an ability to do research and to write intelligibly by submitting to the Committee on Asian Studies two term papers written for any graduate course. After approval by the Committee students will be permitted to go on to the comprehensive examination, where they will be required to prove both a factual and interpretive understanding of the region of this interest based on extensive reading. The comprehensive examination will be administered by an examination committee appointed by the Chairman of the Committee on Asian Studies, and will cover the students' major course work.

In addition to the Upper Division courses in the major, graduate students may take courses from the following: Anthropology/270B—C—D, Art/282, History/201AS, 280, 281, 284, 285, 288, 596, Political Science/285, 286, 287, 289, Religious Studies/201, 202, 203, 253, 254, 255, 257, 596.

Career opportunities

For students who intend to specialize in a discipline at the doctoral level, Asian Studies provides an opportunity for language training and interdisciplinary study of an Asian culture. For students who anticipate a career in Business, Law, Journalism, Government service, or Secondary Education, Asian Studies will lay the ground of a specialized knowledge useful in those professions. But it should be noted that additional training in a professional school is necessary to enter these fields.

Teaching credentials

Students who complete a major in Asian Studies may be eligible to pursue a California teaching credential. Specific details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education.[1]

Correspondence information

For information, write to Chairman, Committee on Asian Studies, University of California, Santa Barbara, California 93106, or phone (805) 961-2794.

Biochemistry and Molecular Biology

Committee

Thomas C. Bruice, Ph.D., Professor of Chemistry* (Chairman).
John A. Carbon, Ph.D., Professor of Biochemistry.*
Ellis Englesberg, Ph.D., Professor of Microbiology.*
J. Thomas C. Gerig, Ph.D., Associate Professor of Chemistry.*
Glyn O. Pritchard, Ph.D., Professor of Chemistry.*
George Taborsky, Ph.D., Professor of Biochemistry.*

Concerns of the program

The interdepartmental graduate program in Biochemistry and Molecular Biology was initiated in 1974-75 and offers studies leading to the Doctor of Philosophy degree. The program is administered jointly by the Departments of Biological Sciences and Chemistry on the premise that, while the subject matter of biochemistry and molecular biology is quite diverse, there exists a common core of knowledge in the field. The emphasis of the program is on the understanding of biological phenomena at the molecular level. However, the program attempts to be hospitable to students with a diversity of backgrounds and career goals and allows for undergraduate preparation of either a chemical or biological orientation. Highly individualized programs of instruction can be undertaken by a student enrolled in the program after consultation with and approval by the Program Committee; about twenty faculty members from the sponsoring departments are available to direct approved research projects under the auspices of the program. Ph.D. candidates in the program must be registered as full time students in either the Department of Biological Sciences or the Department of Chemistry.

It should be noted that the Department of Biological Sciences offers a separate graduate program in this area which emphasizes the molecular biology aspects of the field. Moreover, graduate work in the Department of Chemistry which emphasizes bioorganic, biological and biophysical chemistry is available. Consult the descriptions of these two departments for details.

Doctor of Philosophy

Prerequisites

In addition to fulfilling the general requirements for admission to graduate status, the applicant will normally hold a bachelor's degree in chemistry, biochemistry, or another biological science. Undergraduate preparation should include the equivalent of the following courses offered at UCSB:

Chemistry/**1A—B—C** • **General Chemistry** (12)
Chemistry/**130A—B—C** • **Organic Chemistry** (9)
Chemistry/**6A—B—C** • **Organic Chemistry Laboratory** (6)

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[1] See inside front cover for address.

*See appropriate departmental entries for faculty information.

Chemistry/**113A—C—D** • **Physical Chemistry** (9)
Biology/**130A** • **General Genetics** (4)
Biology/**108A—B—C** • **General Biochemistry** (12)
Mathematics/**3A—B—C** (12)
Mathematics/**4A—B** (8) recommended
Physics/**6A—AL—B—BL—C—CL** *or* Physics/**8A—AL—B—BL—C—CL** (12-15)

Applicants with strong undergraduate records but lacking some of the preparation indicated above may be admitted with the condition that said deficiencies be removed early during their graduate career. Orientation examinations covering basic chemistry, biochemistry and molecular biology will be administered to entering students; the results of these examinations will be used for advisory purposes in designing the program of study for each student.

Requirements

The student may emphasize either biochemistry or molecular biology but the common core of courses listed below must be completed by all students in the program. A complete program of courses will be arranged for each student on an individual basis in consultation with the Program Committee and will include additional courses from the Departments of Chemistry and Biological Sciences.

Common Core:

Biology/**205** (same as Chem 255C) • **Physical Biochemistry of Macromolecules** (3) Lee and Staff
Introduction to biophysical chemistry. Theory and practice of physical methods employed to study macromolecules, emphasizing hydrodynamic methods.

Chemistry/**261A** • **Enzyme Mechanisms** (3) Bruice, Parsons
The chemistry, structure and function of enzymes including discussion of pertinent organic model systems.

Biology/**207** • **Genes, Enzymes and Control Mechanisms** (3) Englesberg and Staff
A study of gene structure, function and expression.

Chemistry/**251B** • **Chemical Aspects of Biological Systems** (3) Staff
Chemical aspects of intermediary metabolism; chemistry of anabolic and catabolic pathways for nucleic acids, proteins, and cofactors.

Biology/**260** • **Research Seminar in Biochemistry/Molecular Biology**
A regularly scheduled series of seminars in biochemistry and molecular biology; all students are required to attend as soon as they enter the program.

Students must pass a first qualifying exam, consisting of an oral research proposition to be taken at the beginning of the 2nd year, and a second qualifying exam, consisting of (a) a comprehensive written exam or a research proposition, and (b) an oral exam immediately following, to be taken at the beginning of the 3rd year of study. Topics for the research propositions and/or comprehensive exams are to be selected from 3 of the areas listed below, such that at least 2 area groups are represented; appropriate areas of study offered by sections of the Department of Biological Sciences or other departments may be substituted for one of the above area groups with the approval of the Program Committee. The candidate must demonstrate a reading knowledge of the scientific literature in one of the following languages: German, Russian or French.

Area Group A Macromolecular structure: proteins, nucleic acids and polysaccharides.

Area Group B 1. Bioorganic chemistry and models of enzyme action. 2. General metabolism and metabolic control. 3. Enzymology.

Area Group C 1. Molecular basis of genetics. 2. Gene regulation.

Students will be expected to begin research for the doctoral dissertation early in their graduate careers; research directors may be selected from appropriate faculty in the Department of Biological Sciences or Department of Chemistry with approval of the Program Committee. Research areas currently under active investigation on campus include the following:

- Bioorganic Chemistry of Enzymes and Coenzymes;
- Chemistry and Biology of Nucleic Acids;
- Microbial Genetics and Regulation of Gene Action;
- Magnetic Resonance Studies of Biological Systems;
- Protein Physical Chemistry;
- Macromolecular Interactions and Conformation;
- Nuclear-cytoplasmic Relationships;
- Developmental Biochemistry;
- Chemical Properties of Membranes;
- Polysaccharide Chemistry;
- Human Cell Genetics;
- Gene Expression and Genetic Dissection in Tetrahymena;
- Chemical and Physical Properties of Regulatory Enzymes;
- Kinetics and Regulation of Enzymes;
- Enzyme Interconversion by Covalent Modification;
- Cell Physiology and Development; Biological Rhythms in Algae;
- Mechanisms of Cellular Differentiation;
- Virology; Mechanisms of Interferon Action;
- Oncogenic Viruses, and
- Synthetic Recombinants and Gene Transfer.

Biological Sciences

Professors

John A. Carbon, Ph.D., Northwestern; biochemistry.
James F. Case, Ph.D., Johns Hopkins; neurobiology.
Vernon I. Cheadle, Ph.D., Harvard; botany (Chancellor).
Joseph H. Connell, Ph.D., Glasgow; population ecology.
Raymond B. Cowles, Ph.D., SUNY, Buffalo; zoology (Emeritus).
James Cronshaw, D.Sc., Ph.D., Leeds; cell biology.
John E. Cushing, Ph.D., Cal-Tech; immunology.
Demorest Davenport, Ph.D., Harvard; zoology.
Barbara B. DeWolfe, Ph.D., Berkeley; vertebrate zoology.
Alfred W. Ebeling, Ph.D., UCLA and Scripps Institution of Oceanography; zoology.
E. Englesberg, Ph.D., Berkeley; microbiology, genetics.
Mary M. Erickson, Ph.D., Berkeley; zoology (Emeritus).
Katherine Esau, Ph.D., Berkeley; botany (Emeritus).
Aharon Gibor, Ph.D., Stanford; cell biology.
Garrett Hardin, Ph.D., Stanford; human ecology.
[1]*Robert W. Holmes*, Ph.D., Oslo; aquatic botany.
W. N. Holmes, D.Sc., Ph.D., Liverpool; zoology.
Helen E. Keener, Ph.D., Chicago; biology (Emeritus).
[1]*Maynard F. Moseley*, Ph.D., Illinois; plant anatomy.
Cornelius H. Muller, Ph.D., Illinois; plant ecology.
Walter H. Muller, Ph.D., Cornell; plant physiology.
William W. Murdoch, D.Phil., Oxford; population ecology.
[1 2 3]*Henry I. Nakada*, Ph.D., Temple; biochemistry.
Michael Neushul, Jr., UCLA; marine phycology.
Elmer R. Noble, Ph.D., Berkeley; zoology (Emeritus).
Eduardo Orias, Ph.D., Michigan; genetics.
Ian K. Ross, Ph.D., McGill; cell biology, mycology.
Dale M. Smith, Ph.D., Indiana; systematic botany.
Beatrice M. Sweeney, Ph.D., Radcliffe; algal physiology.
George Taborsky, Ph.D., Yale; biochemistry (Chairman).
[3]*James L. Walters*, Ph.D., Berkeley; biology.
Adrian M. Wenner, Ph.D., Michigan; natural history of arthropods.

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Steven M. Horvath, Ph.D., Harvard; physiology.

Associate Professors

John R. Haller, Ph.D., UCLA; systematic botany, biogeography.
[1]*Jack L. King*, Ph.D., Berkeley; genetics.
[1]*Ching Kung*, Ph.D., Pennsylvania; behavioral genetics.
Philip C. Laris, Ph.D., Princeton; cell physiology.
Nancy L. Lee, Ph.D., Pittsburgh; molecular biology, biochemistry.
Edward L. Triplett, Ph.D., Stanford; biology.

Assistant Professors

[2]*James L. Childress*, Ph.D., Stanford; ecological physiology.
Steven K. Fisher, Ph.D., Purdue; neurobiology.
Robert S. Jacobs, Ph.D., Loyola; pharmacology.
[1 2]*Richard P. Howmiller*, Ph.D., Wisconsin; limnology, ecology of zoobenthos.
David M. Kohl, Ph.D., New York State University; developmental biology.
Allan Oaten, Ph.D., Michigan State; mathematical biology, statistics.
Stephen I. Rothstein, Ph.D., Yale; evolutionary biology, ecology, ethology.
Charles E. Samuel, Ph.D., Berkeley; animal virology.
Colin A. Wraight, Ph.D., Bristol; biophysical chemistry.

Lecturers

G. Whitney Baines, Ph.D, UCSB; anatomy.
Robert K. Mullen, Ph.D., USC; ecology.
Ralph N. Philbrick, Ph.D., Cornell; botany.

Research Biologists

John R. Calaprice, Ph.D., UCSB; population biology.
Daniel Morse, Ph.D., Albert Einstein College of Medicine; biochemistry.

Associate Research Biologist

Dennis M. Power, Ph.D., Kansas; zoology.

Assistant Research Biologists

Robert W. Byles, Ph.D., New Mexico; zoology.
Robert A. Wallace, Ph.D. Texas; population genetics.

Research Associate

Marta S. Walters, Ph.D., Berkeley; biology.

Concerns of the department

The Department of Biological Sciences (1) provides diverse opportunities for obtaining the Bachelor of Arts degree, through eight departmental majors: Aquatic Biology, Biochemistry-Molecular Biology, Biological Sciences, Botany, Cellular and Organismal Biology, Environmental Biology, Pharmacology and Zoology; (2) offers graduate programs, leading to the degrees of Master of Arts and Doctor of Philosophy, with emphasis in four areas: Aquatic and Population Biology, Biochemistry-Molecular Biology, Cellular and Organismal Biology and Environmental and Systematic Biology; and (3) cooperates with the Department of Chemistry in providing an interdepartmental alternative to departmental graduate programs in biochemistry and molecular biology. In addition, a wide range of courses is available to all undergraduates, for acquainting them with the concepts and methods of the biological sciences, and to all students, for elective enrollment or the support of their preparation for degrees in other departments or programs of the University.

In view of the diversity and wide range of the educational opportunities offered by the Department, it is considered particularly important that students seek advice freely when planning their academic programs. Students choosing any of the majors except Biological

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[1] Absent on Leave, Fall 1975
[2] Absent on Leave, Winter 1976
[3] Absent on Leave, Spring 1976

Sciences will normally be assigned a faculty adviser upon entering the Department. This adviser should be consulted over any question regarding specified options within requirements, alterations in the conventional curriculum and career opportunities. Because the Biological Sciences major is extremely broad and able to accommodate rather divergent interests, students declaring this major will not be assigned faculty advisers until they identify their specific interests to the Department. However, Biological Sciences majors are especially encouraged to consult various members of the faculty, even before their assignment to a single adviser, to be sure that they take best advantage of this loosely structured major in meeting their particular needs. Students interested in certain specialized careers may also seek advice from designated members of the faculty who serve as career advisers.

Waivers and substitutions for departmental requirements, including transfer credits, must be approved by the chairman of the Department, after consultation with the student's faculty adviser. The undergraduate secretary of the Department will assist students in the preparation of the required petitions.

Bachelor of Arts

Basic Preparation for All Majors The preparation for all eight majors includes General Chemistry (Chemistry/1A—B—C and lab) and Introductory Biology (Biology/1A—B—C and lab). In addition, although the various majors specify different individual courses, all require preparation in Organic Chemistry, Physics and Mathematics.

Chemistry/1A—AL—B—BL—C—CL should be taken in the freshman year. It is recommended that Biology/2A—B—C be taken concurrently. Students with a weak mathematics background should make up this deficiency by completing Intermediate Algebra and Trigonometry by correspondence through the University Extension, preferably during the summer preceding enrollment in the university, or by completing Mathematics/1 and/or 2 at UCSB as necessary.

Biology or Botany in the 20 series (i.e. Bio/20 through 29, Botany/20 through 29) may be substituted for Biology/1A either by earning a grade of A for one of these courses or by passing a written final examination for Biology/1A.

Further specific requirements or recommendations concerning the lower division program are presented under the several upper division majors described below.

Common requirements for all majors As a requirement for graduation all students will be required to take the courses listed under Area A, and all students, except those who choose the Biochemistry-Molecular Biology and Pharmacology Majors, will be required to take at least one course* from Area B, and at least one course* from each of two of the three Areas C, D, and E. (*The corresponding laboratory courses must be taken in all cases where it is indicated that concurrent enrollment in the laboratory is required.) Substitutions in the upper division program of any major may be made only with the approval of the Chairman of the Department, after the student has consulted the faculty adviser.

The five areas and elective courses within each follow:

Area	Pertinent Courses
A. Genetics	Biology/130A—B.
B. Physiology	Biology/101; 105; 134; Botany/120; Zoology/101; 109; 143.
C. Development	Biology/103; 144; 160; 175; Botany/171; Zoology/100.
D. Ecology	Biology/145A; Botany/140; 141; 142; Zoology/113A; 140.
E. Diversity of Form and Structure	Biology/104A—B; 122; 131; 141; 142; 143; 145B; 173; Botany/103A—B; 110; 111; 151; 170; Zoology/105; 107; 111; 112A; 113B; 122; 123; 125; 126; 161.

Specific courses to fulfill the requirements above and/or additional requirements follow under the various upper division majors.

The requirements for the Biochemistry-Molecular Biology and Pharmacology majors do not come under the common requirements listed here and are described separately below.

Aquatic Biology

This major provides background preparation for those students specifically interested in the areas of marine biology, biological oceanography, limnology, ecology or population biology. The primary emphasis is on the similarities and differences in marine and freshwater ecosystems, including studies of populations, diversity, morphology and physiology of organisms in these ecosystems.

Preparation for the major: Biology/1A—B—C (and labs); Chemistry/1A—AL—B—BL—C—CL; Chemistry/6A—B and either 8A—B or 130A—B—C; Physics/6A—AL—B—BL—C—CL or 8A—AL—B—BL—C—CL; Mathematics, one of the following options: 1) Mathematics/34A—B and either 34C or Biology/136A; 2) Mathematics/11A—B; 3) Mathematics/3A—B—C (or any combination of 3A—B and 3X—Y—Z followed by satisfactory completion of 3C). (Most graduate schools prefer one year of calculus, option 3 of the above.)

Recommended courses: Chemistry/113A—B—C; Biology/104A—AL; 136B; Chemistry/150, 150L; and a course in Physical Geology. (Consult your adviser, as different fields in aquatic biology have different needs.)

Upper Division major: 38 Upper Division units in Biological Sciences which shall include Biology/145A (Physics and Chemistry of Aquatic Environments) and at least one course from each of the four categories, A-D below, and two disparate courses from category E. This selection will complete the *"Common requirements for all majors"* listed above.

A. Genetics:	Biology/130A—B.
B. Physiology:	Biology/101; 105; Botany/120—120L; Zoology/101; 109; 143—143L.
C. Development:	Biology/144; 160; Botany/171—171L—; Zoology/100—100L.
D. Ecology:	Zoology/140.
E. Diversity:	Biology/141; 142; 143; 145B—145BL; Botany/170—170L; Zoology/105; 111—111L; 112A—B, 122 or 123; 161—161L.

Biochemistry-Molecular Biology

Designed to prepare students interested in gaining an understanding of the characteristics of the molecules and the molecular mechanisms involved in living systems. Recommended especially for those planning graduate work in biochemistry, molecular biology or microbiology.

Preparation for the major: Biology/1A—B—C (and labs); Chemistry/1A—AL—B—BL—C—CL; 130A—B—C and 6A—B—C; Mathematics/3A—B—C; 4A (or any combination of the 3A—B and 3X—Y—Z sequences followed by satisfactory completion of 3C and 4A) or 11A—B—4A (in addition, Math/4B is recommended);

Physics/8A—AL—B—BL—C—CL or 6A—AL—B—BL—C—CL.

Upper Division major: 38 Upper Division units including Genetics (Biology/130A—B), Biochemistry (Biology/108A—B—C and 109L), Physical Chemistry (Chemistry/113A—C—D required, with 113B recommended), plus one additional Upper Division course in Biological Sciences to total at least 38 units distributed between Biology and Chemistry.

Biological Sciences

The purpose of this major is to give the student the flexibility to program the curriculum in Biological Sciences to meet chosen requirements. Students in this major are encouraged to seek out faculty advisers in order to be sure to maximize their educational opportunities within this loosely structured major.

Preparation for the major: Biology/1A—B—C (and labs); Chemistry/1A—AL—B—BL—C—CL; 6A—B and either 8A—B or 130A—B—C; Mathematics/3A—B—C (or any combination of 3A—B and 3X—Y—Z followed by satisfactory completion of 3C) or 11A—B or 34A—B—C; Physics/6A—AL—B—BL—C—CL or 8A—AL—B—BL—C—CL.

Upper Division major: a minimum of 38 Upper Division units in biological and related sciences so long as the *"Common requirements for all majors"* are met.

Botany

Primarily designed to provide an understanding of plant structure and development, diversity, evolutionary relationships, functional systems and environmental relationships.

Preparation for the major: Biology/1A—B—C (and labs); Chemistry/1A—AL—B—BL—C—CL; Chemistry/6A—B and either 8A—B or 130A—B—C; Mathematics/3A—B—C (or any combination of 3A—B and 3X—Y—Z followed by satisfactory completion of 3C) or 11A—B or 34A—B—C; Physics/6A—AL—B—BL—C—CL or 8A—AL—B—BL—C—CL.

Upper Division major: Biology/130A—B; Botany/103A—B; Botany/110 or 111 or 170—170L; Botany/113; 120—120L; 140 or 141 or 142. It is recommended that Botany/103A—B be taken during the sophomore year and Botany/113 and 120—120L be taken as early as possible in the four year sequence.

Completion of these courses required for Botany majors will satisfy the departmental *"Common requirements for all majors."* The remaining units to fulfill the minimum requirements of 38 units in the Upper Division Biological Sciences should be determined in consultation with the student's faculty adviser.

The following courses are strongly recommended: Biology/104A—AL; 107; 137; 130C. Other highly recommended subjects include Animal Diversity, Aquatic Biology, Biochemistry, Biometry, Geography, Geology, Mycology, Plant Taxonomy.

A specialization in Aquatic Botany is possible within the major in Botany by enrollment *(as electives)* in Botany/170—170L; 171—171L; Biology/145A—AL; 134—134L.

Cellular and Organismal Biology

This program is intended for the student primarily interested in the experimental analysis of the life processes of plant and animal organisms. It is considered to be a logical pathway leading to graduate studies in cell biology, development of form and function in plants and animals and the various subdisciplines of phytophysiology and zoophysiology.

Preparation for the major: Biology/1A—B—C (and labs); Chemistry/1A—AL—B—BL—C—CL; 130A—B—C (Upper Division credit) and 6A—B; Mathematics/3A—B—C (or any combination of 3A—B and 3X—Y—Z followed by satisfactory completion of 3C) or 11A—B or 34A—B—C; Physics/1A—AL—B—BL—C—CL or 8A—AL—B—BL—C—CL.

Upper Division major: a minimum of 38 Upper Division units in the Biological Sciences including Biochemistry (Biology/108A—B—C and 109L) and Cell Structure and Function (Biology/137), so long as the *"Common requirements for all majors"* are met.

Environmental Biology

Designed to provide the student with an understanding of the relationships of plants and animals with their physical environment and with each other, as shown at the individual, population, species or community level, as approached through the inter-related disciplines of behavior, ecology, morphology, physiology, systematics and evolution. The location of the campus on the seashore and the close proximity of mountains and desert provide an unusual variety of marine, freshwater and terrestrial habitats in which to work.

Preparation for the major: Biology/1A—B—C (and labs); Chemistry/1A—AL—B—BL—C—CL; 6A—B and either 8A—B or 130A—B—C; Mathematics/3A—B—C (or any combination of 3A—B and 3X—Y—Z followed by satisfactory completion of 3C) or 11A—B or 34A—B—C; Physics/6A—AL—B—BL—C—CL or 8A—AL—B—BL—C—CL.

Six to twelve units from Climatology, Physical Geography, Plant Geography, Geology, Paleontology or Oceanography, and statistics, either lower or upper division, are strongly recommended and should be determined in consultation with the student's faculty adviser.

Upper Division major: Botany/103A—B plus 30 Upper Division units in Biological Sciences which shall include at least 8 units each from Botany and Zoology and at least one course or course sequence from each of the five categories (A—E) listed below. When a course or course sequence is listed in two of the categories (A—E), however, it should be understood that the course will satisfy only one category. The courses selected within these categories (A—E) will complete the *"Common requirements for all majors"*.

A. Genetics:	Biology/130A—B.
B. Physiology:	Botany/120—120L; Zoology/109; 143—143L.
C. Ecology:	Biology/145A; Botany/140; 141; 142; Zoology/140.
D. Natural History:	Biology/145B—BL; 173—173L; Botany/170—170L; Zoology/105; 112A; 113A—AL—B—BL; 122; 125; 161—161L.
E. Systematics:	Biology/145B—BL; Botany/151—151L; Zoology/113A—AL; 123; 126; 161—161L.

Only one of the following courses will be accepted towards the 38 Upper Division unit requirement: Biology/123, 124, 133.

Pharmacology

This major is intended for the student who is interested in a career involving studies of the site and mechanism of action of drugs used to treat diseases in humans. Pharmacology as a basic science is emphasized in contrast to therapeutic principles of pharmacology necessary in professional programs such as medicine, dentistry, veterinary medicine, nursing and pharmacy.

The curriculum content is designed to prepare the student for careers in pharmaceutical research and development laboratories, drug safety laboratories and in research laboratories of federal and state agencies and institutions. The program also provides a strong background for those students choosing to pursue graduate training.

Preparation for the major: Biology/1A—B—C (and labs) Chemistry/1A—AL—B—BL—C—CL; Chemistry/130A—B—C (Upper Division credit) and 6A—B; Mathematics/3A—B—C (or any combination of 3A—B and 3X—Y—Z followed by satisfactory completion of 3C), or 11A—B or 34A—B—C; Physics/6A—AL—B—BL—C—CL or 8A—AL—B—BL—C—CL.

Upper Division major: at least 38 Upper Division units including Genetics (Biology/130A—B), Biochemistry (Biology/108A—B—C and 109L), Basic Pharmacology (Biology/110A—B—C), Pharmacology laboratory (to be announced), and at least one of the following courses in Physiology: Biology/101 or 105 or Zoology/101 or 109. In addition, the following courses are recommended, and students should consult their faculty adviser concerning the advisability of each: Chemistry/150—150L, Biology/104A—AL—B—BL, Biology/136A—B, Biology/140, Zoology/107, Zoology/155.

Zoology

Primarily designed to provide an understanding of animal structure and diversity, evolutionary relationships, functional systems and environmental relationships with an option of specializations in either organismal or population biology.

Preparation for the major: Biology/1A—B—C (and labs); Chemistry/1A—AL—B—BL—C—CL; Chemistry/6A—B and either 8A—B or 130A—B—C; Mathematics/3A—B—C (or any combination of 3A—B and 3X—Y—Z followed by satisfactory completion of 3C), or 11A—B or 34A—B—C; Physics/6A—AL—B—BL—C—CL or 8A—AL—B—BL—C—CL.

Upper Division major: 38 Upper Division units in Biological Sciences which shall include at least one course or course sequence from Areas A and B, one from either Area C or Area D, and one from each of the two subsections of Area E below:

A. Genetics:	Biology/130A—B.
B. Physiology:	Zoology/101—101L; Zoology/109; Zoology/143—143L.
C. Development:	Biology/144; Zoology/100—100L.
D. Ecology:	Zoology/113A—AL; Zoology/140.
E. Diversity and Systematics:	At least one course dealing with vertebrates and at least one dealing with invertebrates. Invertebrates - Zoology/111—111L; 112A; 122; 125. Vertebrates - Zoology/105; 107—107L; 113B—113BL; 161—161L.

These courses satisfy the departmental *"Common requirements for all majors"*. The remaining units to fulfill the minimum requirement of 38 units in Upper Division Biological Sciences should be determined in consultation with a faculty adviser. It is recommended that at least some of these additional Upper Division courses be chosen from Area E above and that at least one Botany course be taken.

Students most interested in various aspects of organismal and cellular biology (development, physiology, biochemistry) should take option C and should also consider a course in biochemistry, whereas those interested in population biology (ecology, evolution) should take option D and should also consider courses in field biology and population genetics.

Additional recommended courses to be chosen from: Evolution, Biochemistry, Biometry.

Recent curriculum changes

Because of recent revisions of the curriculum of the Department of Biological Sciences, embodied in this catalog, students may experience difficulties in the interpretation of course prerequisites or in equating present courses with those of previous catalogs. These students should seek the assistance of the undergraduate secretary of the Department and of their faculty adviser.

Master of Arts and Doctor of Philosophy

The enormous strides made in biology in this century have made possible new means of analysis of longstanding problems. In the process, the lines between traditional fields have become blurred. The organization of the Department into graduate sections reflects these developments, while building on the strong traditions of classical biology. The sections supervise graduate studies and research in their respective areas of emphasis.

1. Aquatic and Population Biology
2. Biochemistry-Molecular Biology
3. Cellular and Organismal Biology
4. Environmental and Systematic Biology

Master of Arts

Requirements

The Department offers two plans for the Degree of Master of Arts.

1. In addition to fulfilling the general requirements for admission to graduate status, foreign students may be required to perform satisfactorily in an examination in English prior to admission.

2. A candidate for the master's degree must have, in addition to the general University requirements, the minimum lower and upper division requirements or their equivalents for the departmental major in the field of emphasis chosen. Students with minor deficiencies in these requirements will normally be allowed to complete them while in the graduate status.

Doctor of Philosophy

Requirements

In addition to fulfilling the general requirements for admission to graduate status, foreign students may be required to perform satisfactorily in an examination in English prior to admission.

Prospective candidates for the degree of Doctor of Philosophy in biology normally must have the bachelor's degree in one of the biological sciences from this University, or from an institution of equivalent standing and with a preparation deemed equivalent to that required for the bachelor's degree from this University. The student who is admitted to graduate standing with deficiences in preparation will be required to take appropriate undergraduate courses. A student who has completed a major in a subject other than the biological sciences is advised to consult with the Department chairman.

A reading knowledge of one foreign language is required. (Usually German, French or Russian.)

Each prospective candidate is required to take a qualifying examination administered by the department.

Each candidate must complete a doctoral dissertation under the general supervision of a committee. A final oral examination is given on the dissertation and its implications.

Ordinarily a candidate is required to serve as a Teaching Assistant for a minimum of three quarters.

Emphasis in Aquatic and Population Biology

Each graduate student in Aquatic and Population Biology must meet the equivalent of the minimum requirements of one of the undergraduate majors in the Department of Biological Sciences at UCSB, including a year of calculus in college. Students with degrees in disciplines other than biological sciences also must complete these requirements.

All candidates for a higher degree are required to take Biology/136A and Biology/136B, or equivalent. The Graduate Record Examination is required of all applicants.

Requirements for the M.A.: (See General University and Departmental Requirements).

Plan I: Thesis Plan — A minimum of 30 quarter units in courses in the major subject approved by the student's adviser and a thesis are required. The units may be taken in Graduate or Upper Division courses, and at least 12 must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee.

Plan II: Comprehensive Examination Plan — A minimum of 36 quarter units in courses in the major subject of which at least 18 units must be in the 200 and 500 series and satisfactory performance in a comprehensive final examination are required. Courses outside the major may be substituted upon written approval by the student's advisory committee. The Comprehensive Examination will cover a major and a minor area of emphasis. The major emphasis must be selected from the list given below for the Ph.D. program. The minor area may be selected from this list or, with the approval of the section, from another appropriate discipline.

Requirements for the Ph.D.: (See General University and Departmental Requirements).

The student must meet all of the University and Departmental requirements for the Ph.D. degree.

The following is a list of specialized areas of graduate study in Aquatic and Population Biology:

1. Biology of Arthropods
2. Biological Oceanography and Limnology
3. Comparative Immunology
4. Ichthyology (systematics, morphology and ecology)
5. Parasitology
6. Population Ecology
7. Population Genetics
8. Algal Ecology
9. Mathematical Biology
10. Ecological Physiology

Each student is expected to select one of these areas as a major field of study. One minor area of study must be selected from these areas or, with the approval of the graduate committee, from any other discipline in the University.

Emphasis in Biochemistry-Molecular Biology

Students interested in pursuing graduate work in biochemistry-molecular biology are advised to obtain a strong background in chemistry, physics and mathematics and to be familiar with the concepts of biology. It is recommended that the undergraduate preparation include, as a minimum, the equivalent of the following courses offered at UCSB:

BIOLOGY		
General	1A, 1B, 1C	15
Genetics	130A—B	6
Biochemistry	108A—B—C	12
CHEMISTRY		
General	1A, 1B, 1C	12
Organic	130A—B—C	9
	6A—B—C	6
Physical	113A—C—D	9
MATHEMATICS	3A—3B—3C (4A—4B)	12-20
PHYSICS	6A—AL—B—BL—C—CL or 8A—AL—B—BL—C—CL	12-15

Applicants with strong undergraduate records, but lacking some of the preparation indicated above, may be admitted upon the condition that such deficiencies be removed early during graduate study. Thus, chemistry or physics majors with insufficient experience in biology, or students with extensive preparation in the biological sciences but inadequate training in chemistry, can often remedy these omissions subsequent to admission.

Requirements for the M.A.: (see General University and Departmental requirements) Students will follow one of the following two plans.

Plan I: Thesis Plan — A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or Upper Division courses in the major subject, and at least 12 will normally be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. No unit credit is allowed for the thesis.

Plan II: Comprehensive Examination Plan — A minimum of 36 units of Upper Division and graduate courses in the major subject is required, of which at least 18 units will normally be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. Satisfactory performance in a comprehensive examination will cover two of the specialized areas of graduate study listed in the Ph.D. program. Students must pass a comprehensive examination which will cover one specialized area from each of two area groups of graduate study listed in the Ph.D. program.

Requirements for the Ph.D.: (see general University and Departmental requirements)

Students must pass a first qualifying exam, consisting of an oral research proposition to be taken at the beginning of the second year, and a second qualifying exam, consisting of (a) a comprehensive written exam or a research proposition and (b) an oral exam immediately following, to be taken at the beginning of the third year of study. Topics for the research propositions and/or comprehensive exams are to be selected from three of the following areas, such that at least two area groups are represented.

Area Group A

1. Macromolecular Structure and Function
2. General Metabolism and Regulatory Mechanisms

Area Group B

3. Microbiology
4. Virology
5. Biology of the Eucaryotic Cell

Area Group C

6. Molecular and Cellular Genetics
7. Developmental Biology

In addition students must take at least one upper division course (not required for admission) or a graduate course in each of the above seven subdivisions.

Emphasis in Cellular and Organismal Biology

Students interested in pursuing graduate work in this area should obtain a strong background in chemistry, physics and biology. As a guide for the undergraduate planning a career in this area of biology it is suggested that the student acquire the knowledge and experience similar to that suggested for the undergraduate major in Cellular and Organismal Biology. Electives should be chosen which are pertinent to the student's proposed area of specialization.

Requirements for the M.A.: (see General University and Departmental requirements) a) In addition to the general University requirements, the student must have the minimum lower and upper division courses, or their equivalents, recommended for undergraduates interested in Cellular and Organismal Biology. b) Students will follow one of the following two plans.

Plan I: Thesis Plan — A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses in the major subject, and at least 12 must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. No unit credit is allowed for the thesis..

Plan II: Comprehensive Examination Plan — A minimum of 36 units of upper division and graduate courses in the major subject is required, of which at least 18 units must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. Satisfactory performance in a comprehensive final examination is also required. The comprehensive examination will cover three of the specialized areas of graduate study listed in the Ph.D. program.

Requirements for the Ph.D.: (see General University and Departmental requirements) The following is a list of the specialized areas of graduate study available to the student:

1. Cell physiology
2. Development
3. Comparative physiology
4. Endocrinology
5. Neurophysiology (neurophysiology, ultrastructure, behavior, development)
6. Plant physiology
7. Cell structure and function
8. Pharmacology

The student will be expected to choose one of the areas listed above as a major field of study, Two minor areas of study may be slected from either the areas listed above or some area outside the section of cellular and organismal biology. Courses approved by the student's graduate committee will be distributed in the major and two minor areas of specialization.

Emphasis in Environmental and Systematic Biology

Programs in environmental and systematic biology emphasize the biology of plants or animals in marine, freshwater or terrestrial environments.

Students intending to pursue graduate work in environmental biology must complete the equivalent of the minimum requirements of the undergraduate major in environmental biology at UCSB Students whose interests lie primarily in botanical or zoological studies will better prepare for graduate work by completing the equivalent of the undergraduate major in botany or zoology.

Students who are admitted to one of the graduate programs with deficiencies in their undergraduate major will be expected to make these up as soon as possible following their admission.

Requirements for the M.A.: (See General University and Departmental Requirements) A student may select environmental biology, systematics, botany or zoology as a major field. The M.A. degree may be earned by following either *Plan I* or *Plan II* as outlined below.

Plan I: Thesis Plan — A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses in the major subject and at least 12 must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. No unit credit is allowed for the thesis.

Plan II: Comprehensive Examination Plan — A minimum of 36 units of upper division and graduate courses in the major subject is required, of which at least 18 units must be in the 200 and 500 series in the major subject. Satisfactory performance in a comprehensive final examination is also required. The Comprehensive Examination will cover a major and one minor area of emphasis. The major emphasis must be selected from the list given below for the PH.D. program. The minor area may be selected from this list, or, with the written approval of the section, from other appropriate disciplines.

Requirements for the Ph.D.: (See General University and Departmental Requirements) Each student will select, with the approval of the advisory committee, a major and two minor fields of study. The minor fields may be selected from appropriate disciplines in other sections or departments.

The following is a list of specialized areas of study offered in the section of Environmental and Systematic Biology.

1. Biochemical systematics
2. Biogeography
3. Marine algology (systematics, morphology and development)
4. Plant ecology
5. Plant physiology
6. Plant systematics and biosystematics (vascular plant)
7. Vascular plant anatomy, morphology and phylogeny
8. Vertebrate behavior
9. Vertebrate annual cycles

Interdepartmental Program of Graduate Studies in Biochemistry and Molecular Biology

This program provides an alternative to the standard graduate programs in Biological Sciences and Chemistry. It is sponsored jointly by the Departments of Biological Sciences and Chemistry on the premise that, while the subject matter of biochemistry and molecular biology is tremendously diverse, there exists a common core of knowledge in the field. The program aims to be hospitable to the diversity of background and outlook of students entering the field of Biochemistry and Molecular Biology. It allows for undergraduate preparations of either chemical or biological orientation by providing flexible routes of entry to advanced study in the field. However, it is intended that these routes converge on what is considered to be a common core of knowledge, fundamental to any involvement with the numerous specialty areas in the field. The core curriculum is designed to offer an optimal foundation on which subsequent specialization could be built, without tying the student to a given specialty area by bonds of too narrow a preparation.

For details see the separate entry under Biochemistry and Molecular Biology.

Career opportunities

Many students in the Department of Biological Sciences prepare for entry into graduate or professional schools upon graduation. These students should discuss their undergraduate programs with their advisers, with a view to their plans for continued education. Many other students in the Department plan to enter a wide range of careers upon gaining their Bachelor of Arts degree. These students may profit from consulting with specially designated faculty advisors who are informed about certain specialized careers which are open to graduates with an undergraduate education in biological sciences.

Pre-professional programs leading to subsequent study in agriculture, dentistry, forestry, laboratory technology, medicine, nursing and similar professions are highly variable depending (a) upon the field, and (b) upon the professional training institution to be attended. The student should become familiar with the requirements of several institutions offering work in the specialty before discussing the program with the counselor.

In general, students preparing for careers in medicine, dentistry, nursing and laboratory technology will select one of the following as their major field: Biochemistry-Molecular Biology, Biological Sciences, Cellular and Organismal Biology, or Zoology.

Aquatic Biology, Biological Sciences, Botany, Cellular and Organismal Biology or Environmental Biology would be suitable for preparation for further study in agriculture and forestry, and wildlife and water management.

Pharmacology prepares for a research career in pharmacology or for graduate work in fields of biomedical science.

Teaching credentials

Students who complete a major in this department may be eligible for pursuing a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter in the year in which the advanced degree will be completed.

The Departmental Credential Adviser may be consulted concerning academic program planning by students interested in a teaching career.

Correspondence information

Department of Biological Sciences, Biological Sciences Building Unit I, Rm. 1205, University of California, Santa Barbara, California 93106 Telephone: (805) 961-3511.

Biology

Lower Division courses

1A • Introductory Biology (5) Samuel and Walters
Prerequisites: Chemistry/1A—B—C. Lecture, four hours; lab, three hours. Cellular morphology, cellular physiology and metabolism, genetics. (Offered only in the Fall.)

1B • Introductory Biology (5) Connell and Staff
Prerequisites: Biology/1A. Lecture, three hours; lab, six hours. Population biology and introduction to the major groups of animals. (Offered only in the Winter.)

1C • Introductory Biology (5) Moseley, Neushul, Ross
Lecture, three hours; lab, six hours. Introduction to the microorganisms, fungi, algae and true plants. (Offered only in the Spring.)

2FS • Vertebrate Energy Budgets and How They Are Balanced (2) DeWolfe
Freshman Seminar, two hours. Behavior of representative vertebrates is interpreted in terms of how a given species balances its energy budget. Adaptive value of specific behavior patterns is discussed.

3FS • Neurobiology (2) Case
Freshman Seminar, two hours. Neurobiology, the mechanistic analysis of the functions of the nervous system using (in this instance) behavior and neurophysiology of single invertebrates, will be used as an introduction to the scientific method and the basic principles of biology.

4FS • Special Topics in Molecular Biology (2) Taborsky
Prerequisite: A course in high school chemistry. Freshman Seminar, two hours. Exploration of the molecular basis of selected characteristics of living systems. Biological order, specificity and continuity will be considered in terms of molecular descriptions of cells and cellular processes.

Contemporary Natural Sciences (See Natural Science/1A—1B—1C). (4,4,4) Staff
Sequence, beginning in the fall.

2A—B—C • Special Topics in Biology for Freshmen (1,1,1) Staff
Seminar, one hour. Seminars by the staff concerning current research. References to review articles and the original literature will be provided. Recommended for all freshmen interested in the biological sciences.

20 • Concepts of Biology (4) Staff
Offered in Summer Session only.
Lecture, four hours. Unifying principles of biology; cell structure, functions, and energy relations; cybernetics, natural selection, evolution; reproduction and the principles of genetics and development; nature and growth of populations. Not ordinarily open to majors in the Department of Biological Sciences for credit. Not open for credit toward graduation to students who have completed Biology/20Z or Botany/20.

20Z. • General Biology for Modern Man (4) Childress
Lecture, three hours; laboratory, three hours. This course will emphasize those aspects of Biology considered to be particularly relevant to a citizen in today's world. It will place emphasis on the environmental aspects of biology, but will also give an overall view of biology. Not open for credit towards graduation to students who have completed Biology/20 or Botany/20, or Natural Science/1C.

21 • Vertebrate Adaptations (4) DeWolfe
Lecture, three hours; discussion, one hour. The study of adaptations in vertebrate behavior, form and function as a background to understanding the biology of man. Not ordinarily open to majors in the Department of Biological Sciences for credit.

22 • Topics in Human Biology (4) Laris
Lecture, three hours; discussion, one hour. Discussion of a number of principles and discoveries in physiology, heredity and ecology of importance to man. Not ordinarily open to majors in the Department of Biological Sciences for credit.

23 • Human Development and Reproductive Physiology (4) Triplett
Lecture, three hours; discussion, one hour. Human development with emphasis on events occurring prior to parturition. Hormonal devices involved in human reproduction. Comments on senescence and carcinogenesis. Not ordinarily open to majors in the Department of Biological Sciences for credit.

Upper Division courses

101 • General Cell Physiology (3) Gibor
Prerequisites: Biology/1A—B—C (or equivalent); and organic chemistry, with laboratory. Lecture, three hours. Chemical and physical principles which govern some properties of living matter and its interaction with the environment.

102 • Methods in Cell Physiology (3) Gibor
Prerequisite: Biology/101 or consent of instructor. Laboratory, six hours; discussion, two hours. Experiments, demonstrations and discussion on methods used in cell physiology.

103 • Introduction to Developmental Mechanisms (3) Kohl
Prerequisites: Zoology/100 recommended. Lecture, 3 hours. An introduction to the study of mechanisms that control development.

103L • Laboratory in Developmental Mechanisms (1) Kohl
(Given alternate years.)
Prerequisite: Biology/103 or taken concurrently. Laboratory, three hours. Selected experiments on mechanisms that control development.

104A • General Microbiology (3) Lee
Prerequisites: Biology/1A—B—C; Chemistry/8A—B and 6A—B, or 130A—B—C and 6A—B; and concurrent enrollment in Biology/104AL. Lecture, three hours. An introduction to the biological properties of microorganisms; the historical foundations of the field; a study of the major groups of microorganisms, with emphasis on the bacteria, and viruses; their structure, cultivation, and pathogenicity.

104AL • Laboratory in Microbiology (2) Lee
Prerequisite: Concurrent enrollment in Biology/104A. Laboratory, six hours. Experiments dealing with the isola-

tion, cultivation, and enrichment of diverse microorganisms.

104B • General Microbiology (3) Englesberg
Prerequisites: Biology/104A—AL, and concurrent enrollment in Biology/104BL. Lecture, three hours. Physiology and genetics of microorganisms.

104BL • Laboratory in Microbiology (2) Englesberg
Prerequisite: Concurrent enrollment in Biology/104B. Laboratory, six hours. Experiments dealing with the physiology and genetics of microorganisms.

105 • Biology, Neurobiology/I (4) Case and Fisher
Prerequisite: Biology/1A. Lecture, three hours; discussion, one hour. Properties of the nervous system ranging from single cells to the whole organism using examples from vertebrates and invertebrates studied in terms of morphology, physiology and behavior.

106 • Biology, Neurobiology/II (4) Fisher and Case
Prerequisites: Neurobiology/I and permission of instructor. Lecture, three hours; discussion, one hour. A continuation of Neurobiology/I.

106L • Biology, Laboratory in Neurobiology (3) Case and Fisher
Prerequisites: Neurobiology/I and concurrent enrollment in Neurobiology/II and permission of the instructor. Laboratory, six hours. Histological, electrophysiological, and behavioral experiments designed to demonstrate basic principles of neurobiology.

107 • Cytology and Cytogenetics (4) Walters
Prerequisites: Biology/1A—B—C or equivalent. Lecture, three hours; Laboratory, three hours. Fundamentals of cellular structure and function, with special emphasis on the chromosomes, cell division, and the interrelations of cytology with genetics and evolution.

108A • General Biochemistry (4) Staff
Prerequisites: Chemistry/130A—B—C and 6A—B (or Chemistry/8A—B and 6A—B). Lecture, three hours; discussion, two hours. Chemistry of proteins; enzymic catalysis; bioenergetics; metabolism of carbohydrates.

108B • General Biochemistry (4) Nakada
Prerequisite: Biology/108A. Lecture, three hours; discussion, one hour. Metabolism of biologically important compounds; metabolic control mechanisms.

108C • General Biochemistry (4) Carbon
Prerequisite: Biology/108A—B. Lecture, three hours; discussion, one hour. Chemistry and metabolism of nucleic acids; biosynthesis of proteins; biochemical genetics.

109L • Laboratory in Biochemistry (3) Nakada
Prerequisites: Biology/108A—B. (Biology/109L may be taken concurrently with Biology/108B) Laboratory, nine hours. Laboratory techniques in biochemistry.

110A • Basic Pharmacology (3) Jacobs
Prerequisites: Biology/1A—B—C, Chemistry/1A—B—C, Chemistry/130A—B—C, Mathematics/34A—B—C. Lecture, three hours. Designed to provide the student with a comprehensive knowledge of the history and scope of pharmacology as a basic science. The principles of drug action and the relationship of pharmacology to physiology, chemistry, and biochemistry are emphasized.

110B • Basic Pharmacology (4) Jacobs
Prerequisite: Biology/110A. Lecture, three hours; discussion, one hour. Continuation of Biology/110A.

110C • Basic Pharmacology (3) Jacobs
Prerequisites: Biology/110A—B. Lecture, three hours. Continuation of Biology/110A—B.

111 • Introduction to Hematology (1) Staff
Prerequisite: Consent of instructor. Five lectures, five laboratories, total for quarter. Theory and practice on recognition of cell types, counting of various cell types, hematocrits, and recognition of abnormal hemoglobin.

114 • Biochemical Genetics of Man (3) King
Prerequisites: Biology/130A—B—C or Biology/133, Chemistry/8A—B or 130A—B—C or consent of instructor. Lecture, three hours. Biochemical variation in man. Inheritance of protein polymorphisms; inborn errors of metabolism; methods of study; ethnic groups and gene frequencies; prospects for treatment of genetic diseases. Chromosomal variation in man.

118 • Principles of Biochemistry (4) Taborsky
Prerequisites: Chemistry/1A—B—C, Chemistry/8A—B and 6A—B or consent of the instructor. Lecture, three hours; discussion, one hour. An introduction to molecular structures and mechanisms of living systems. Not for majors in Biochemistry-Molecular Biology or Cellular and Organismal Biology.

122 • General Animal Virology (3) Samuel
Prerequisites: Biology/130A or consent of instructor. Biology/104A—B and Biology/108A—B—C are recommended. Lecture, three hours. An introduction to the biology of animal viruses with emphasis on the biochemical and biophysical properties of viruses; the mechanisms by which animal viruses replicate; the cellular effects of, and response to, viral infection; and selected aspects of medical virology.

123 • Cybernetic Processes in Human Ecology (4) Hardin
Prerequisites: Biology/1A or Biology in the 20 series or Botany/20 or Environmental Studies/6 or consent of instructor. Lecture, two hours; discussion, two hours. **This course is the same as Environmental Studies/123.** Population and related pollution, resources, and conservation problems are analyzed in the light of cybernetics and systems analysis. An inquiry into why such problems are "controversial," and into the origins of psychological denial.

124 • Competitive Processes in Human Ecology (4) Hardin
Prerequisites: Biology/123 and consent of instructor. Lecture, two hours; discussion, two hours. The theory of human competition in various aspects: Natural selection of genes, social selection, and conscious selection policy (eugenics); tribalism (including racism), and the biological effects of various forms of warfare.

125 • Photobiology (3) Wraight
Prerequisites: Qualitative grasp of quantum mechanics and various topics of physical chemistry and consent of instructor. Lecture, three hours. An introduction to the interdisciplinary subject matter of photo-biology; will include the Franch-Condon principle, some photo-chemistry and their application to such fields as vision, photo-synthesis, bioluminescence, DNA damage and repair, etc.

127 • Principles of Immunology (3) Cushing
Prerequisites: Organic Chemistry (may be taken concurrently), General Genetics (Biology/130A, may be taken concurrently), and a year's course in Introductory Biology (Biology/1A—B—C or equivalent). Lecture, three hours. The principles of immunology are treated as basic biological phenomena. Emphasis on relationships to such areas of molecular biology as genetics, biochemistry and the activities of cells.

127L • Laboratory in Immunology (1) Cushing
(Not offered 75-76.)
Prerequisite: Concurrent enrollment in Biology/127. Laboratory, three hours. Laboratory studies in immunology.

130A • Introductory Genetics: Elementary mechanisms and prokaryotic genetics (4) Orias and Staff
Prerequisites: Biology/1A—B—C, Chemistry/1A—B—C, junior standing. Lecture, three hours; discussion, one hour. Introduction to the structure and function of the genetic material. The course covers the structure of *DNA* and the cellular and molecular mechanisms underlying *DNA* replication, mutation, recombination, transcription, translation and their regulation. Although the basic mechanisms to be considered are universal (applicable from viruses to man), the emphasis will be on bacteria and viruses, as they provide the best experimental documentation of the elementary mechanisms of genetics. Adequate background in the biology of bacteria and viruses will be provided in the course.

130B • General Genetics (4) King and Staff
Prerequisite: Biology/130A. Lecture, three hours; discussion, one hour. Introduction to the transmission and expression of genetic material as it occurs in nucleate organisms from yeast to man. The genetic biology of eukaryotes is considered on the molecular, cellular, developmental, familial and population levels, with emphasis on inferences drawn from experiments and observations.

130C • Population Genetics (4) King
Prerequisites: Biology/130A and 130B, or equivalent. Lecture, three hours; discussion, one hour. The consequences of Mendelian principles in diploid populations, including quantitative genetics, genetic correlations, gene frequency, change under selection, the effects of mutation on populations, gene interactions in fitness, and ecological genetics.

130L • Genetics Laboratory (2) Orias and Staff
Prerequisite: Biology/130A or consent of instructor. Laboratory, six hours. An introduction to the experimental analysis of the mechanisms of heredity.

131 • Evolution (3) Cushing
Prerequisite: Biology/130A—B. Lecture, three hours. Organic evolution, with critical discussion of possible mechanisms involved.

133 • Principles of Human Genetics (3) Walters
(Not offered 1975-1976)
Prerequisites: Any introductory Biology course and consent of instructor. Lecture, three hours. Basic processes of heredity in man and their application to such matters as the heredity-environment problem, population genetics, heredity counselling, medico-legal problems, selection and evolution.

134 • Physiology of Algae (2) Sweeney
Prerequisites: Biology/1A—B—C. Biochemistry recommended. Mineral nutrition, nitrogen fixation, pigments, photosynthesis, phototaxis, rhythms and other phenomena in algae will be studied using original papers.

134L • Physiology of Algae-Laboratory Projects (2) Sweeney
Prerequisites: Biology/134, and permission of instructor. Independent research projects will be carried out. These projects will derive from the study of algal physiology during the preceding quarter. Each student will choose a project possible to complete in one quarter, utilizing local algae or species obtained from the culture collection at UCSB.

136A—B • Biometry (3,3) Oaten
Prerequisites: Mathematics/3A—B—C, or 34A—B, or consent of instructor, and concurrent enrollment in Biology/136AL—BL. Lecture three hours. Statisical methods in biology. Includes descriptive statistics, frequency distributions, statistical inference, analysis of variance, correlation, regression, and non-parametric methods. Special emphasis is placed on their interpretation, correct application and efficient computation.

136AL—BL • Laboratory in Biometry (1,1) Oaten
Prerequisite: Concurrent enrollment in Biology/136A—B. Laboratory, four hours. Practical Instruction in solving problems and using calculators.

137 • Cell Structure and Function (3) Cronshaw
Prerequisite: Biology/1A—B—C. Lecture, three hours. An introduction to the structure of membranes and the structure and function of subcellular components.

139 • Structure and Function of Subcellular Components (3) Cronshaw
Prerequisite: Biology/137. Lecture, three hours. Advanced studies of the structure and function of subcellular components.

140 • Mammalian Cells in Culture (3) Englesberg
Prerequisites: Biology 104A, 104B, 130A, 130B and two quarters of biochemistry. Lecture, three hours. It is virtually impossible to study mammalian cells in culture without coming to grips with the problem of *malignancy.* This course will cover the fundamental properties of the mammalian cell in culture and the relationship of these properties to cancer. The following topics will be covered: growth, nutrition, and metabolism of normal and malignant cells in culture; factors which regulate the growth; the establishment and characterization of primary cell cultures, strains, and cell lines; the hyman lymphoblast; virus transformation; the lectins; active transport; genetics, hybridization, mutant isolation and selection techniques, chromosome identification, association of a phenotype with a particular chromosome; genetics of malignancy.

140L • Mammalian Cells in Culture Laboratory (3) Englesberg
Prerequisites: Concurrent enrollment in Biology/140 or previous enrollment and consent of instructor. Laboratory, six hours. Selected experiments dealing with the establishment of primary cell cultures, maintenance of cell lines, growth, nutrition, genetics and transport, the lectins, growth control of normal and transformed cells.

141 • Biology of the Marine-Land Interface (3) Wenner
Taught in Summer Session only.
Prerequisite: One year of general biology. Lecture, two hours; discussion, one hour; laboratory, six hours. Influence of physical factors on adaptations of shoreline organisms with emphasis on the arthropods.

142 • Marine Microbiology (4) Staff
Taught in Summer Session only.
Prerequisite: Junior standing in biology. Lecture, five hours; laboratory, six hours. Microbiological processes including nutrient recycling in aquatic environments.

143 • Biology of Zooplankton (4) Staff
Taught in Summer Session only.
Prerequisite: Junior standing in biology. Lecture, five hours; laboratory, six hours. Systematics, morphology, biology and ecology of zooplankton.

144 • Development of Marine Invertebrates (3) Triplett
Taught in Summer Session only.
Prerequisites: Biology/1A—B—C and Chemistry/1A—B—C. Lecture, three hours; laboratory, six hours. Descriptive embryology of marine invertebrates. Causal mechanisms in the development of invertebrates.

145A • Physics and Chemistry of Aquatic Environments (3) R. W. Holmes
Prerequisites: Upper Division standing and permission of the instructor. Lecture, three hours. A discussion of the physical and chemical characteristics of biological significance in freshwater and marine environments.

145AL • Chemical and Physical Methods of Aquatic Environments (2) R. W. Holmes, Howmiller.
Prerequisites: Biology/145A (must be taken concurrently) and consent of instructor. Laboratory, three hours; field trip, three hours. A survey of physical and chemical methods used by limnologists and oceanographers, supplemented with field observations.

145B • Biology of Aquatic Systems (3) R. W. Holmes, Howmiller
Prerequisites: Biology/145A and permission of the instructor. Lecture, two hours. Morphology, systematics, life cycles and general ecology of freshwater and marine organisms, with emphasis on aquatic plant plankton.

145BL • Methods of Aquatic Biology (2) R. W. Holmes
Prerequisites: Biology/145AL and Biology/145B (must be taken concurrently with Biology/145B) and permission of the instructor. Laboratory, three hours; field trip, three hours. Laboratory and field experience in the observation, identification, and quantitative enumeration of aquatic organisms.

145CL • Laboratory in Aquatic Biology (2) R. W. Holmes, Howmiller
Prerequisites: Biology/145A, 145AL, 145B, 145BL, and permission of instructor. Laboratory, six hours. Laboratory and field projects in Aquatic Biology.

155 • Conservation of Aquatic Resources (3) Staff
Prerequisites: Environmental Studies/1, 2, 5 and 6 or introductory courses in Chemistry and Biology. Lecture, two hours; discussion, one hour. Biological, chemical and physical characteristics of lakes, streams, and estuaries. Succession and dynamics of population in aquatic environment. Emphasis will be placed on man's interaction with aquatic system; pollution, eutrophication, fisheries management.

This course is the same as Environmental Studies/155 and will be doubly listed by Biological Sciences and Environmental Studies. Not open to students who have taken Biology/145B.

160 • Plant Development (2) Sweeney
(Not offered in 1975-1976)
Prerequisites: Biology/1A—B—C and Chemistry/130A—B—C. Lecture, two hours. The development of plants guided by their physiological responses to light and gravity, the interaction of hormones, and other factors.

160L • Laboratory in Plant Development (2) Sweeney
(Not offered in 1975-1976)
Laboratory, six hours. Techniques for the study of developmental processes in higher plants.

173 • Introduction to Mycology (3) Ross
Prerequisites: Biology/1A—B—C and concurrent enrollment in Biology/173L. Lecture, three hours. An introduction to the structure and function of fungi with emphasis on their development and associations with other organisms, including man.

173L • Laboratory in Mycology (1) Ross
Prerequisites: Concurrent enrollment in Biology/173. Laboratory, three hours. A survey of the major forms and behavior patterns of fungi with practical instruction in isolation, cultivation and identification of microfungi.

174 • Methods in Experimental Mycology (3) Ross
(To be given alternate years.)
Prerequisite: Biology/173 or consent of instructor. Discussion, one hour. Laboratory, six hours. Techniques and experimentation on fungal growth, development and differentiation.

175 • Fungal Development (3) Ross
(To be given alternate years — Winter 1977)
Prerequisites: Biology/173 and consent of instructor. Lecture, two hours; discussion, one hour. The development of fungi as a function of their response to interactions between the genome and intercellular and environmental stimuli.

194 • Group Studies for Advanced Students (1) Staff
Prerequisite: Consent of the instructor. Oral reports by students; one seminar period. (May be repeated for a maximum of four units.) Enrollment normally limited to 12 or fewer students.

A. **Biochemistry-Molecular Biology:** Staff.
B. **Biochemistry-Molecular Biology:** J. A. Carbon (AC); E. Englesberg (EE); D. M. Kohl (DK); C. Kung (CK); N. Lee (NL); H. I. Nakada (HN); E. Orias (EO); C. E. Samuel (CES); G. Taborsky (GT); E. L. Triplett (ET).
C. **Systematics:** J. R. Haller (JH); D. M. Smith (DS).
D. **Plant Ecology:** Staff.
E. **Embryology:** D. M. Kohl (DK); E. L. Triplett (ET).
F. **General Physiology:** P. C. Laris (PL); A. Gibor (AG).
H. **Immunology:** J. E. Cushing (EC); E. L. Triplett (ET).
I. **Phycology:** M. Neushul (MN).
J. **Evolutionary and Behavioral Ecology of Vertebrates:** S. I. Rothestein (SIR).
K. **Biometry:** A. Oaten (AO).
M. **Comparative Physiology:** B. B. DeWolfe (BD); R. J. Chaffee (RC).
N. **Plant Physiology:** W. H. Muller (WHM).
Q. **Aquatic Biology:** R. Howmiller (RH); R. W. Holmes (RH).
R. **Neurophysiology:** J. F. Case (FC).
S. **Protist Physiology:** B. Sweeney (BMS).
T. **Parasitology:** Staff.
U. **Biogeography:** J. R. Haller (JH).
V. **Mycology:** I. K. Ross (IR).
W. **Arthropod Biology:** A. Wenner (AW).
X. **Cell Biology:** J. Cronshaw (JC).
Y. **Plant Morphology:** M. Neushul (MN); M. F. Moseley (MM).
Z. **Group Studies in Ecological Physiology:** J. J. Childress (CC).

195A—B • Development of Biological Ideas (2,2) Hardin
Prerequisites: Upper Division standing in department and consent of instructor. Discussion, two hours. May be repeated three times for credit. Reading of biographies and classical original papers in biology, followed by individual reports and class discussion.

***198 • Readings in Biological Sciences** (1-5) Staff
Prerequisites: A major in biological sciences and consent of the instructor. Individual conferences one hour every two weeks. Special readings designed to broaden the outlook of students and to knit into a cohesive whole the basic principles underlying the major disciplines in the field.

***199 • Independent Studies in the Biological Sciences** (1-5) Staff
Prerequisites: A major in biological sciences and consent of the instructor. Hours and credit by arrangement with any member of the staff. Laboratory or field.

*Open only to students in Upper Division standing (84 or more units completed) who have a B average or better. There is a maximum of five units per quarter, 15 units per year, and 30 units total in both 198/199 combined.

Graduate courses

201 • Neurophysiology (3) Case
Prerequisite: A course in cellular or animal physiology. Lecture, three hours. The properties of nerve, neural systems and sense organs as illustrated with invertebrate material.

201L • Laboratory in Neurophysiology (2) Case
Prerequisite: Consent of the instructor. Laboratory, six hours. Laboratory projects illustrating the neurophysiology of invertebrates.

202 • Biochemical Embryology (2) Kohl
(To be offered alternate years.)
Prerequisites: Biology/103, and consent of instructor. Lecture, two hours. Recent advances in the biochemistry of animal development and cell differentiation.

203 • Models of Developing Cell Systems (2) Triplett
(To be offered alternate years.)
Prerequisites: Biology/103 and consent of instructor. Lecture, two hours. A mathematical treatment of development phenomenon. Models of cellular differentiation and cellular associations.

203L • Laboratory on Models of Developing Cell Systems (1) Triplett
Prerequisite: Concurrent enrollment in Biology/203. Laboratory, three hours. Computer methods of dealing with models of developing cell systems. Practice in the use of analog and digital computers in studies on development.

205 • Methods in the Characterization of Biological Macromolecules (3) Lee
(This course is the same as Chemistry 255C.).
Prerequisite: Biology/255A—B or the consent of the instructor. Lecture, two hours; discussion, one hour. The structure-function and physical properties of biological macromolecules with emphasis on hydrodynamic properties, including sedimentation diffusion, viscosity, osmotic pressure.

206 • Membrane Transport (2) Laris
Prerequisites: Zoology/101, and Biochemistry/108A, or consent of instructor. Lecture, two hours. A review of the mechanisms of transport across biological membranes.

207 • Genes, Enzymes and Control Mechanisms (3) Staff
Prerequisites: Biology/104A—B, 108A—B—C, 130A—B, or consent of the instructor. Lecture, three hours. A study of gene structure, function and expression.

210 • Cell Heredity (3) Orias
(Offered alternate years.)
Prerequisites: Biology/30A—B and one quarter of Biochemistry, or consent of the instructor. Lecture, three hours. The cellular and molecular mechanisms underlying the transmission and regulated expression of genetic determinants, with emphasis upon studies of microorganisms.

211 • Ciliate Biology (3) Orias and Kung
Prerequisite: Consent of instructor. Lecture, two hours; seminar, one hour. Conceptual bases for the experimental use of Ciliates as models of eucaryotic cells in current frontiers of Biology: nuclear differentiation, membrane bioelectrics, cell morphogenesis and hormone action. An oral presentation of a paper in the recent literature will be required.

212 • Molecular Virology (3) Samuel
Prerequisites: Biology/104A—B, 108A—B—C, and 130A—B, or consent of instructor. Lecture, three hours. Consideration of current concepts of the structure, mechanisms of genetic expression, and cellular effects of animal viruses with emphasis on the molecular and functional aspects. The first part of the course will be devoted primarily to cytocidal viruses, and the second part will deal specifically with tumor viruses.

213 • Biochemistry of the Nucleic Acids (3) Carbon
Prerequisites: Biology/108A—B and Organic Chemistry or consent of the instructor. (Chemistry 245 is recommended.) Lecture, three hours. Nucleic acid structure and function, chemistry of nucleotides and polynucleotides, sequencing methods, biosynthesis, polymerases, and nucleases.

214 • Structure and Function of Proteins (3) Taborsky
(Offered alternate years.)
Prerequisite: Consent of the instructor. Lecture, three hours. Aspects of the structure of proteins and protein-prosthetic group systems; interactive effects; mechanisms of action.

217 • Bioenergetics (3) Wraight
Prerequisites: Some familiarity with chemical thermodynamics and some knowledge of biochemistry. Some seniors will be accepted by consent of instructor. Lecture, three hours. A course to explore the underlying principles and mechanisms of energy conservation in biological systems, especially in oxidative (mitochondrial) and photosynthetic phosphorylation and electron transport.

218 • Advanced Immunology (2) Cushing and Triplett
Prerequisite: A course in elementary genetics and immunology or consent of the instructor. Lecture, two hours. Advanced consideration of selected topics in immunology.

220 • Experimental Cytology and Electron Microscopy (2) Cronshaw
Prerequisites: Biology/108A—B—C or consent of instructor, and concurrent enrollment in Biology/220L. Lecture, two hours. An introduction to the techniques of structural cytology.

220L • Laboratory in Experimental Cytology and Electron Microscopy (3) Cronshaw
Prerequisite: Concurrent enrollment in Biology/220. Laboratory, nine hours. Use of the electron microscope and preparation techniques for electron microscopy.

232 • Molecular Evolution (3) King
(Not to be offered 1975-76.)
Prerequisite: Consent of instructor. Lecture, two hours; seminar, one hour. Taught fall quarter of odd-numbered years only. The analysis and interpretation of evolutionary divergence of proteins and nucleic acids. The discussion will focus on calculation of rates of molecular change, the patterns and processes involved, the construction of phylogenetic trees, and some of the basic laboratory procedures.

234 • Physiology of Algae (2) Sweeney
Prerequisites: Organic Chemistry. Lecture, two hours. Physiology of the responses of marine and freshwater algae to light, temperature and the chemical composition of their environment.

234L • Laboratory in Physiology of Algae (2) Sweeney
Laboratory, six hours. Techniques for the study of algal physiology.

235 • Advanced Topics in Algology (2) Gibor
Prerequisites: Biology/134, Botany/170, 171, or consent of instructor. Lecture, two hours. The use of specialized algal species as model-systems for research of basic biological problems.

236 • Function and Behavior of Coenocytic Fungi (2) Ross
Prerequisite: Biology/173 or consent of the instructor. Lecture, two hours. Aspects of the genetic (heterocaryotic and parasexual) and epigenetic regulation of interactions within and among the multi-nucleate, accelular fungi.

241 • Mammalian Cells in Culture (3) Englesberg
Prerequisites: Biology/104A, 104B, 130A, 130B, plus two quarters of biochemistry. Lecture, three hours. Fundamental properties of mammalian cells in culture and the relationship of these properties to cancer. Growth, nutrition, metabolism and active transport of normal and malignant cells, the establishment and characterization of primary cell cultures and cell lines; virus transformation; genetics.

241L • Mammalian Cells in Culture Laboratory (3) Englesberg
Prerequisites: Biology/241 or concurrently and permission of instructor. Laboratory, six hours. Experiments dealing with the culturing of mammalian cells, their growth, nutrition and genetics.

245 • Advanced Population Biology (3) Murdoch
Prerequisites: An ecology course and permission of instructor. Lecture, three hours. A course dealing in depth with a few selected aspects of population and community dynamics of organisms. Extensive reading of original papers.

247A • Mathematical Biology (3) Oaten
(Offered alternate years.)
Prerequisite: Consent of instructor. Lecture, three hours. Mathematical methods in biology, with particular emphasis on the use of matrices and vector spaces and with applications mainly in population biology, including demography, prey-predator systems, Markov processes, regression and analysis of variance.

247B • Mathematical Biology (3) Oaten
(Offered alternate years.)
Prerequisite: Consent of instructor. Lecture, three hours. Mathematical methods in biology, with particular emphasis on the use of matrices and vector spaces and with applications mainly in population biology, including demography, prey-predator system, Markov processes, regression and analysis of variance.

250 • Marine Phytoplankton (2) R. W. Holmes
Prerequisites: Courses in Oceanography and Marine Plankton; or consent of the instructor; and concurrent enrollment in Biology/250L. Lecture, two hours. A laboratory course designed to acquaint the student with the problems and methods of cultivation of marine planktonic protists.

250L • Laboratory in Marine Phytoplankton (1) R. W. Holmes
Prerequisite: Concurrent enrollment in Biology/250. Laboratory, three hours. Field studies in phytoplankton ecology and biological oceanography.

251 • Cultivation of Marine Planktonic Protists (1) R. W. Holmes
Prerequisites: Consent of instructor and concurrent enrollment in Biology/251L. Lecture, one hour. A laboratory course designed to acquaint the student with the problems and methods of cultivation of marine planktonic protists.

251L • Laboraotry in Cultivation of Marine Planktonic Protists (2) R. W. Holmes
Prerequisite: Concurrent enrollment in Biology/251. Laboratory, six hours. A discussion of techniques used in the cultivation of marine planktonic protists.

255A • Methods in the Characterization of Biological Macro-molecules (Joint listing with the Department of Chemistry) (3) Staff
Prerequisites: Biochemistry, Calculus, Physical Chemistry or the consent of the instructor. Lecture, two hours; discussion, one hour. Introduction to biophysical chemistry. Macromolecular struction and conformation, intermolecular interactions, and multiple equilibria.

255B • Methods in the Characterization of Biological Macromolecules (Joint listing with the Department of Chemistry) (3) Staff
Prerequisite: Biology/255A. Lecture, two hours; discussion, one hour. Theory and practice of physical methods employed to study macromolecules. Spectroscopic techniques, including ORD, CD, UV, fluorescence and phosphorescence, NMR, ESR, EM, and X-ray diffraction.

259 • Introduction to Research Techniques (1) Nakada
Prerequisites: Graduate standing and consent of instructor. Lecture, one hour; laboratory, two hours. Theory and de-

monstration of techniques such as spectroscopy (UV,IR, visible), chromatographic techniques (liquid, gas liquid and amino acid analyzer), ORD-CD, electrophoresis, fluorometry, polarography ultracentrifugation, and electron microscopy.

260 • Research Seminar in Biochemistry-Molecular Biology (1) Staff (Joint listing with Dept. of Chemistry)
Prerequisite: Graduate status. Lecture, one hour. Seminars presented by faculty of the Chemistry Department and the Molecular Biology-Biochemistry Section of Biological Sciences. Topics to be research in progress. (Required attendance for graduate students in the interdepartmental major in Biochemistry-Molecular Biology.)

262 • Literature in Molecular Biology (1) Englesberg
Prerequisites: At least one year of graduate work, and consent of the instructor. Discussion, one hour. Critical reading and presentation of the current literature in molecular biology by staff, postdoctoral fellows and graduate students. (Required attendance for graduate students in Biochemistry and Molecular Biology.)

264 • Literature in Nucleic Acids (1) Carbon and Orias
Prerequisite: Consent os instructor. Discussion, one hour. Critical reading and presentation of the recent literature on nucleic acids by staff, postdoctoral fellows and graduate students.

266 • Literature in Developmental Neurobiology (1) Fisher
Prerequisite: Consent of instructor. Lecture, one hour. Critical reading and presentation of the literature on development of the nervous system, with emphasis on structural and biochemical changes, neuronal specification, and the development of behavior.

267 • Literature in Neurobiology (1) Fisher and Case
Prerequisite: Consent of instructor. Lecture, one hour. Critical reading and presentation of the literature in various topics in neurobiology including structure, physiology and behavior.

268 • Literature in Population and Ecological Genetics (3) King
Prerequisite: Population Genetics. Lecture, one hour; seminar, one hour; discussion, one hour. Taught fall quarter of even-numbered years only. A survey of current and recent literature on the genetics of natural populations and theoretical population genetics. Gene flow, genetic adaptation to diverse habitats, and patterns of polymorphism. Each student presents and conducts a discussion. May be repeated for credit.

595A—Z • Group Studies (1) Staff
Prerequisite: Consent of the instructor. (May be repeated for a maximum of six units.) Seminar, one to two hours. A critical review of research in selected fields of biology. Subject matter for these seminars will be selected from the following list:
A. **Biochemistry-Molecular Biology:** Staff
B. **Biochemistry-Molecular Biology:** J. A. Carbon (AC); E. Englesberg (EE); D. M. Kohl (DK); C. Kung (CK); N. Lee (NL); H. I. Nakada (HN); E. Orias (EO); C. E. Samuel (CES); G. Taborsky (GT); E. L. Triplett (ET).
C. **Systematics:** J. R. Haller (JH); D. M. Smith (DS).
D. **Plant Ecology:** Staff
E. **Embryology:** D. M. Kohl (DK); E. L. Triplett (ET).
F. **General Physiology:** P. C. Laris (PL); A. Gibor (AG).
G. **Virology:** C. E. Samuel (CES).
H. **Immunology:** J. E. Cushing (EC); E. L. Triplett (ET).
I. **Phycology:** M. Neushul (MN).
J. **Evolutionary and Behavioral Ecology of Vertebrates:** S. I. Rothstein (SIR).
K. **Biometry:** A. Oaten (AO)
L. **Cell Evolution and Development:** A. Gibor (AG).
M. **Comparative Physiology:** B. B. DeWolfe (BD); R. J. Chaffee (RC).
N. **Plant Physiology:** W. H. Muller (WHM).
O. **Invertebrate Behavior:** D. Davenport (DD).
P. **Advanced Population Ecology:** J. H. Connell (HC); W. W. Murdoch (WM); J. L. King (JK); A. Oaten (AO).
Q. **Aquatic Biology:** R. Howmiller (RH); R. W. Holmes (RH).
R. **Neurophysiology:** J. F. Case (FC).
S. **Protist Physiology:** B. Sweeney (BMS).
T. **Parasitology:** Staff
U. **Biogeography:** J. R. Haller (JH).
V. **Mycology:** I. K. Ross (IR).
W. **Arthropod Biology:** A. Wenner (AW).
X. **Cell Biology:** J. Cronshaw (JC).
Y. **Plant Morphology:** M. Neushul (MN); M. F. Moseley (MM).
Z. **Group Studies in Ecological Physiology:** J. J. Childress (CC).

596 • Directed Reading and Research (2-12) Staff
Prerequisites: Graduate standing and consent of instructor. May be repeated for credit up to half of the units required for the M.A. degree.

597 • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-12) Staff
Prerequisites: Graduate standing and consent of instructor. No unit credit allowed toward advance degree. Enrollment limited to 24 units per examination. Maximum of 12 units per quarter.

598 • Master's Thesis Research and Preparation (1-6) Staff
Prerequisites: M.A. (Thesis) candidate and consent of committee chairman. For research underlying the thesis and writing of the thesis. Maximum of 12 units total. No unit credit allowed toward degree.

599 • Ph.D. Dissertation Preparation (1-12) Staff
Prerequisites: Ph.D. candidate and consent of instructor. May be repeated for credit up to 12 units total. For writing of the dissertation.

Botany

Lower Division courses

20 • General Botany (5) W. H. Muller
Lecture, four hours; laboratory, three hours. Unifying principles of biology utilizing plants as exemplary material; correlation of structure and function; genetics, selection, and evolution; energy transformation; growth of populations and the relation of plants to man; conservation.

Not open for credit toward graduation to students who have completed Biology/20 or Biology/20Z, or Natural Sciences/1C.

Upper Division courses

103A • Vegetation and Flora of California (4) Haller
Prerequisite: Introductory course in Botany or Biology, or Environmental Studies/2. Lecture, two hours; laboratory and field, six hours. Primarily for students majoring in Botany, Biology or related fields. An introduction to the important plant species, families and communities of California and western North America, by means of extensive field observations, plant collection, the use of manuals, and the application of taxonomic and ecological principles. Both 103A and 103B must be taken to receive credit.

103B • Vegetation and Flora of California (4) Haller
Prerequisite: An introductory course in Botany or Biology, or Environmental Studies/2. Lecture, two hours; laboratory and field, six hours. Primarily for students majoring in Botany, Biology or related fields. An introduction to the important plant species, families and communities of California and western North America, by means of extensive field observations, plant collection, the use of manuals, and the application of taxonomic and ecological principles.

Both 103A and 103B must be taken to receive credit.

110 • Morphology of Bryophytes and Lower Vascular Plants (4) Moseley
(Offered alternate years.)
Prerequisite: Biology 1A—B—C, or consent of the i uctor. Lecture, two hours; laboratory, six hours. Study of the structure, life-cycles, anatomy, and relationships of Bryophytes and lower fossil and living vascular plants; conquest of the land.

111 • Morphology of the Higher Vascular Plants (5) Moseley
(Not to be offered 1975-76.)
Prerequisite: Biology/1A—B—C, or consent of the instructor. Lecture, three hours; laboratory, six hours. Study of the structure, life-cycles, anatomy, and relationships of the fossil and living higher vascular plants; evolution of ovule, angiosperm, and the flower.

113 • Plant Anatomy (5) Moseley
Prerequisite: Biology/1A—B—C, or consent of instructor. Lecture, three hours; laboratory, two hours. An introduction to the anatomy of vascular plants. Fundamental descriptive, developmental and comparative aspects of anatomy.

114 • Ecological Plant Anatomy (3) Moseley
(Not to be offered 1975-76.)
Prerequisite: Botany/113. Lecture, two hours; laboratory, three hours. The anatomical adaptations of vascular plants to environmental factors, principally to soil, water, light, and biotic factors.

120 • Introductory Plant Physiology (3) W. H. Muller
Prerequisites: Biology/1A—B—C; organic chemistry and concurrent enrollment in Botany/120L; or consent of instructor. Lecture, three hours. Functions of higher plants; photosynthesis, assimilation, water relations, and growth regulators.

120L • Laboratory in Introductory Plant Physiology (2) W. H. Muller
Prerequisites: Concurrent enrollment in Botany/120. Laboratory, six hours. Laboratory experiments in plant physiology.

123 • Plant Physiology in Relation to Soil Factors (2) W. H. Muller
Prerequisites: Biology/1A and 1C or consent of the instructor. Lecture, two hours. Development and characteristics of soils. Physiology of higher plants as affected by water, minerals, and other variables in the soil.

140 • General Plant Ecology (3) C. H. Muller
Prerequisites: Biology/1A—B—C and consent of instructor. Botany/103A—B is recommended. Lecture, two hours; laboratory or field, four hours. An introduction to the principles of plant ecology including analysis of the environment, plant interactions, and community dynamics.

141 • Physical Plant Ecology (3) Staff
Prerequisites: Biology/1A—B—C, Botany/140, and consent of instructor. Lecture, two hours; laboratory or field, three hours. A course in plant or animal physiology is recommended.

Relationships between plants and physical environment. Emphasis is given to measurement and interpretation of environmental characteristics and to physiological adaptation.

142 • Ecology of Biotic Communities (4) C. H. Muller
Prerequisites: Background in Field Botany and consent of the instructor. Lecture, two hours; laboratory, six hours. The theories of community origin, structure, and function and the environmental basis of community distribution.

146 • Plant Geography (4) Haller
Prerequisites: Biology/1A or Biology in the 20 series, Botany/20, and Botany/103A—B. Recommended:

Geography/3 or Botany/140. Lecture, four hours. The distribution of communities, floristic groups and individual species of vascular plants as determined by environment, migration and ecolution.

151 • Taxonomy of Vascular Plants (2) Smith
Prerequisites: Biology/1A—B—C, Botany/103A—B, or consent of instructor, and concurrent enrollment in Botany/151L. Lecture, two hours. A systematic study of the characteristics and relationships of vascular plant families; the history, principles and methods of plant classification.

151L • Laboratory in the Taxonomy of Vascular Plants (2) Smith
Prerequisite: Concurrent enrollment in Botany/151. Laboratory, six hours. Laboratory examination of the families of vascular plants.

152 • Principles of Plant Systematics and Evolution (3) Smith
Prerequisites: At least one course in both taxonomy and genetics and consent of instructor. Lecture, three hours. Variation and evolution in higher plants and the relations of these phenomena to taxonomic practice.

153 • Field and Experimental Methods in Plant Systematics (4) Smith
Prerequisites: At least one course in both taxonomy and genetics and consent of the instructor. Lecture, one hour; laboratory, six hours. The application of field and laboratory procedures to studies of variation and evolution and the utilization of these data in plant systematics; consideration of race and species hybrids, cytotaxonomy, chemotaxonomy.

170 • Phycology (2) Neushul
Prerequisites: Biology/1A—B—C, and concurrent enrollment in Botany/170L. Lecture, two hours. An introduction to the algae, with emphasis on comparative morphology, evolution and classification. Attention is also given to environmental factors that influence marine and freshwater algal habitats.

170L • Laboratory in Phycology (2) Neushul
Prerequisite: Concurrent enrollment in Botany/170. Laboratory, six hours. A study of marine and freshwater algae in the laboratory and in the field.

171 • Advanced Phycology (2) Neushul
Prerequisites: Botany/170—170L, or consent of instructor, and concurrent enrollment in Botany/171L. Lecture, two hours. Development, differentiation and morphogenesis of algae. Emphasis is placed in the laboratory on the experimental manipulation of living plants. Algal cells are studied using both light and electron microscopes.

171L • Laboratory in Developmental Phycology (2) Neushul
Prerequisites: Concurrent enrollment in Botany/171, and consent of instructor. Laboratory, six hours. Methods of developmental phycology; emphasis is placed on the experimental manipulation of living plant materials.

Graduate courses

242 • Biotic Competition (3) Staff
Prerequisite: A course in Ecology and consent of the instructor. Lecture, one hour; laboratory, six hours. The mechanisms of interspecific and intraspecific competition and related interations.

243 • Chemical Interactions Between Plants (3) C. H. Muller
Prerequisite: Consent of instructor. Lecture, one hour; laboratory and field, six hours. The role of metabolites and other chemical exudates in the ecology of plants.

252 • Principles of Plant Systematics and Evolution (3) Smith
Prerequisites: At least one course in both taxonomy and genetics and consent of the instructor. Lecture, three hours. Variation and evolution in higher plants and the relation of these phenomena to taxonomic practice.

253 • Field and Experimental Methods in Plant Systematics (4) Smith
Prerequisites: At least one course in both taxonomy and genetics and consent of instructor. Lecture, one hour; laboratory, six hours. The application of field and laboratory procedures to studies of variation and evolution and the utilization of these data in plant systematics; consideration of race and species hybrids, cytotaxonomy, chemotaxonomy.

Zoology

Lower Division courses

25 • Human Anatomy (3) Staff
Prerequisite: Concurrent enrollment in Zoology/25L except for those for whom Zoology/25 is an elective course. Recommended: Biology/20 or other course in biology. Lecture, three hours. The structure of the organ systems based on human material.

25L • Laboratory in Human Anatomy (3) Staff
Prerequisite: Concurrent or previous enrollment in Zoology/25. Laboratory, eight hours; discussion, one hour. Dissection of the cat and human material.

40 • Human Physiology (4) Fisher
Prerequisites: Chemistry/1A or 25, or Physics/6A or 10. Lecture, four hours. A course in general biology or anatomy is recommended. An introduction to human physiology, with emphasis on control mechanisms.

40L • Laboratory in Human Physiology (1) Fisher
Prerequisite: Concurrent enrollment in Zoology/40. Laboratory, three hours. An elementary course in experimental physiology, with emphasis on mammals.

Upper Division courses

100 • Developmental Biology (3) Kohl and Triplett
Prerequisites: Biology/1A—B—C and concurrent enrollment in Zoology/100L. Lecture, three hours. Descriptive embryology of vertebrates and an introduction to developmental mechanisms.

100L • Laboratory in Developmental Biology (2) Kohl and Triplett
Prerequisite: Concurrent enrollment in Zoology/100. Laboratory, three hours; discussion, one hour. Laboratory techniques in Developmental Biology.

101 • Topics in Cell Physiology (4) Laris
Prerequisites: Biology/1A—B—C, Organic Chemistry, Physics recommended. Lecture, three hours; discussion, one hour. Discussions of mechanisms of transport across biological membranes, bioelectrical phenomena and cellular motility with emphasis on studies on animal cells.

101L • Laboratory in Animal Cell Physiology (1) Laris
Prerequisite: Concurrent enrollment in Zoology/101. Laboratory, three hours. Experiments in transport, bioelectricity and motion.

105 • Functional Design of Fishes (4) Ebeling
Prerequisites: Biology/1A—B—C. Lecture, three hours; Laboratory, three hours. An introduction to the study of fishes, emphasizing the interaction of morphology and function.

105BL • Problems in Ichthyology (4) Ebeling
Prerequisites: Biology/1A—B—C, Zoology/161 and/or Zoology/105, and consent of instructor. Lecture, one hour; discussion, one hour; laboratory, six hours. University SCUBA certification strongly recommended. Original investigations of fishes: their systematics, ecology, design and function.

107 • Comparative Vertebrate Anatomy (4) DeWolfe
Prerequisites: Biology/1A—B—C and concurrent enrollment in Zoology/107L. Lecture, three; discussion, one hour. The adult anatomy of vertebrates: Its evolutionary and adaptive significance.

107L • Laboratory in Comparative Vertebrate Anatomy (1) DeWolfe
Prerequisites: Concurrent enrollment in Zoology/107. Laboratory, three hours. Comparative morphology of organ systems, through demonstrations and dissections of selected vertebrate types.

109 • Vertebrate Physiology I: Regulation of Body Fluids (3) W. N. Holmes
Prerequisite: Zoology/107. Lecture, three hours. A survey of the physiology of vertebrate organ systems with special emphasis on the control mechanisms.

111 • General Parasitology (3) Staff
Prerequisites: Biology/1A—B—C and concurrent enrollment in Zoology/111L. Lecture, three hours. Biological aspects of parasitism; animal parasites of man and other animals.

111L • Laboratory In Parasitology (2) Staff
Prerequisite: Concurrent enrollment in Zoology/111. Laboratory, six hours. The study of parasites from living and preserved material.

112A • Invertebrate Zoology (4) Davenport
Prerequisite: Biology/1A—B—C, or Biology in the 20 series with consent of the instructor. Lecture, two hours; laboratory, six hours. An introduction to the classification, structure, life histories and habits of the major phyla of invertebrate animals, with emphasis on the marine fauna of the Santa Barbara area.

112B • The Invertebrate as an Experimental Animal (3) Davenport
Prerequisite: Zoology/112A, or it equivalent. Lecture, three hours. A consideration of the experimental advances that have been made with invertebrate animals in the control of development, organization, information transfer and behavior, with emphasis on the relation of these studies to the physiological ecology of groups.

112L • Problems in Invertebrate Zoology (3) Davenport
Prerequisite: Zoology/112B. Admission by consent of the instructor only. Discussion, one hour; laboratory, six hours. The experimental approach to invertebrates. Individual and group problems in development, behavior and physiological ecology.

113A • Evolution and Behavioral Ecology of Terrestrial Vertebrates (2) Rothstein
Prerequisites: Biology/1A—B—C and concurrent enrollment in Zoology/113AL. Lecture, two hours. Evolutionary and ecological principles as demonstrated by birds, mammals and herptiles; competition and other species interactions; diversity and systematics with special emphasis on speciation theory.

113AL • Laboratory in Vertebrate Biology (2) Rothstein
Prerequisite: Concurrent enrollment in Zoology/113A. Laboratory, six hours. Classification, identification and observation of local vertebrates stressing birds and herptiles.

113B • Evolution and Behavioral Ecology of Terrestrial Vertebrates (2)Rothstein
Prerequisites: Zoology/113A and concurrent enrollment in Zoology/113BL. Lecture, two hours. Principles of behavior as demonstrated by mammals, birds, and herptiles, and the manners in which behavior and ecology interact in determining the biology of vertebrates. A strong evolutionary approach will be emphasized.

113BL • Laboratory in Vertebrate Biology (2) Rothstein
Prerequisites: Zoology/113A and AL and concurrent enrollment in Zoology/113B. Laboratory, six hours. Classification, identification and observation of local vertebrates stressing birds and mammals. Introduction to research techniques used in the field by vertebrate biologists.

113CL • Laboratory and Individual Research in Vertebrate Biology (2-4) Rothstein and DeWolfe
Prerequisites: Zoology/113B, BL and consent of instructor. Laboratory, six to twelve hours. Field studies of the vertebrates of California, stressing species and communities, requiring several extensive field trips; individual field and/or lab research projects dealing with theoretical problems posed by the biology of vertebrates.

121 • Aquatic Arthropods (2) Wenner
Prerequisites: Biology/1A—B—C. Lecture, two hours. Selected topics in the biology of aquatic arthropods, including classification, evolution, anatomy, life histories, and population structure.

122 • Biology of Aquatic Arthropods (5) Wenner
Prerequisites: Biology/1A—B—C. Lecture, two hours; discussion, one hour; laboratory, six hours. Natural history and diversity of aquatic and semi-aquatic arthropods in the local ponds, streams, sloughs, and ocean; with an emphasis on their distribution, abundance, identification, systematics, and environmental adaptations. Includes laboratory and field study.

123 • Diversity of Aquatic Arthropods (2) Wenner
Prerequisites: Zoology/121 or 122 or 124 or 125. Discussion, 1 hour; laboratory, three hours. Diversity and systematics in selected groups of aquatic arthropods, including independent research in laboratory and field and coordination with findings of others.

124 • Terrestrial Arthropods (2) Wenner
Prerequisites: Biology/1A—B—C. Lecture, two hours. Selected topics in the biology of terrestrial arthropods (primarily insects), including classification, evolution, anatomy, life histories, and environmental adaptations.

125 • Biology of Terrestrial Arthropods (5) Wenner
Prerequisites: Biology/1A—B—C. Lecture, two hours; discussion, one hour; laboratory, six hours. Natural history and diversity of terrestrial arthropods in the local area; with an emphasis on their distribution, abundance, identification, systematics, and environmental adaptations. Includes laboratory and field study.

126 • Diversity of Terrestrial Arthropods (2) Wenner
Prerequisites: Zoology/121 or 122 or 124 or 125. Discussion, one hour; laboratory, three hours. Diversity and systematics in selected groups of terrestrial arthropods, including independent research in laboratory and field and coordination with findings of others.

128 • Vertebrate Physiological Cycles (2) DeWolfe
(Not offered 1975-76.)
Prerequisite: Zoology/109 or equivalent, passed or taken concurrently. Lecture, two hours. Analysis of seasonal changes in the endocrine and reproductive systems of native vertebrates. Physiological concomitants of the annual cycles, and environmental factors of dynamic importance.

140 • Ecology (4) Connell, Murdoch, and Staff
Prerequisites: Biology/1A—B—C; mathematics through introductory calculus or consent of instructor. Lecture, three hours; discussion, one hour. The biology of populations and communities of organisms. Introduction to population dynamics and the structure and function of ecological communities.

140AL—BL • Laboratory in Ecology (3,3) Connell and Murdoch
Prerequisites: Zoology/140 (may be taken concurrently) or its equivalent, and consent of instructor. Laboratory, six hours. Laboratory and field analyses of the biology of population and communities. Both quarters must be taken; grades for both will be assigned upon successful completion of 140BL.

142A—B • Comparative Physiology (2,2) Case and Childress
Prerequisites: Biology/1A—B—C and concurrent enrollment in Zoology/142AL—BL. Lecture, two hours. Analysis of physiological principles by the comparative method with emphasis on Neurobiology (A) and Homeostatic Mechanisms (B).

142AL—BL • Laboratory in Comparative Physiology (2,2) Case and Childress
Prerequisite: Concurrent enrollment in Zoology/142A—B. Laboratory, six hours. Laboratory exercises in comparative physiology with emphasis on invertebrates.

143 • Ecological Physiology (3) Childress
Prerequisites: Biology/1A—B—C, Zoology/112A, and concurrent enrollment in Zoology/143L. Lecture, three hours. This course will consider the physiological responses and adaptations of animals to their environments. The underlying physiological and biochemical mechanisms will be emphasized. The approach will be comparative in nature and will emphasize aquatic animals.

143L • Laboratory in Ecological Physiology (2) Childress
Prerequisite: Concurrent enrollment in Zoology/143. Laboratory, six hours. Semi-independent study lab to accompany Zoology/143. The physiological responses and adaptations of animals to their environment will be studied. Aquatic animals will be emphasized.

155 • Vertebrate Physiology II: General Endocrinology (4) W. N. Holmes
Prerequisites: Comparative Vertebrate Physiology (Zoology/109). Laboratory, six hours; discussion, one hour. An introduction to the endocrine system in vertebrates and the nature of hormonal control mechanisms.

161 • Systematics of Fishes (2) Ebeling
Prerequisites: Biology/1A—B—C and concurrent enrollment in Zoology/161L. Lecture, two hours. The systematics of fishes, emphasizing their evolution, classification, and distribution.

161L • Laboratory in the Systematics of Fishes (2) Ebeling
Prerequisite: Concurrent enrollment in Zoology/161. Laboratory, six hours. Laboratory studies in the systematics of fishes.

Graduate courses

237 • Animal Behavior as a Science (4) Wenner
Prerequisites: A course in invertebrate zoology and a university course in physiology. Lecture, three hours; discussion, one hour. A comparative study of the methodology used in the study of behavior, including a treatment of perception, behavioral patterns, social organization, and an analysis of various forms of communication.

255 • Comparative Endocrinology (3) W. N. Holmes
Prerequisites: Zoology/109, or 142A or Biology/101. Qualifed seniors may take the course with the consent of the instructor. Lecture, two hours. A detailed study of the hormonal regulatory mechanisms in vertebrates.

255L • Experimental Endocrinology (2) W. N. Holmes
Prerequisites: Zoology/255. Laboratory, six hours. Techniques of experimental endocrinology.

Black Studies

Assistant Professor

Kane C. Anyanwu, Ph.D., Madrid; African religion and philosophy.
Gerard G. Pigeon, Ph.D., UCSB; literature and linguistics (Chairman).

Lecturer

Willie R. Collins, M.A., UCSB; ethnic music.

Concerns of the department

The Department of Black Studies seeks to increase the general awareness and understanding of the Black experience through an examination of its contemporary and historical manifestations in various societies. To do this, it utilizes a cross-cultural approach and incorporates the active participation of faculty, students and the wider community.

The major in Black Studies is designed to provide (1) a broad cross-cultural orientation focusing on the heritage and contemporary social situation of Black people (2) instruction for students who intend to do graduate work in the area of ethnic-american studies or allied areas in the social sciences, humanities and arts (3) the Department of Black Studies offers a major leading to the Bachelor of Arts Degree (4) the faculty members of the department are available for students wishing to pursue an independent Masters of Arts in the area of Black Studies and/or African Area Studies.

Bachelor of Arts

Preparation for the major

A total of 8 courses of lower division work is required in preparation for the major. All students must complete Black Studies/1A—B—C and 2 or approved equivalents. Four courses from departments below with no more than 2 courses from any one department. Anthropology/2, 3 and 5 recommended; Economics/1, 2; Geography; History/4A—B—C, 17A—B recommended; Philosophy/1 or 5 recommended; Political Science/5, 10, and 45 recommended; Sociology/1 and 2 recommended. Courses taken from the above sequences, except Black Studies, in preparation for the Black Studies major may also, in certain instances, be used to fulfill the requirements of the general education program. Although a foreign language is not required, majors in Black Studies are encouraged to take at least three (3) quarters of a foreign language of their choice.

Upper Division major

Required: 36 units of upper division Black Studies courses, twelve (12) of which may be taken in upper division work in closely related departments or fields. This should be worked out with the department adviser. Cross listed courses such as Black Studies/176 will count as *one* course in the major requirements.

Career opportunities

This major is designed to provide undergraduate preparation for careers in teaching, community services, or in government agencies.

Teaching credentials

Students who complete a major in Black Studies may be eligible to pursue a California teaching credential. Consult with the credential adviser in Black Studies for specific departmental requirements.

Details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Correspondence information

Department of Black Studies, South Hall, Room 4631. University of California, Santa Barbara, California 93106. Phone: (805) 961-3800.

Black Studies

Lower Division courses

1A • Introduction to the Cultures and Peoples of African Heritage: The United States of America (4) Staff
Part one of a three quarter sequence required as preparation for the major in Black Studies. Its specific focus is the United States and its objective is to acquaint the beginning student, mainly freshmen, with the historical and current social condition of Black people in North America.

1B • Introduction to the Cultures and Peoples of African Heritage: Latin America and the Caribbean (4) Pigeon
Part two of a three quarter sequence required as preparation for the major in Black Studies. The history of Black peoples in Latin countries and in the Caribbean will be surveyed. Attention will be given to the differential adaptations made and the different levels of prosperity and influence achieved by Black people in this area of the world.

1C • Introduction to the Cultures and Peoples of African Heritage: The African Continent (4) Anyanwu
Part three of a three quarter sequence required as preparation for the major in Black Studies. Selected areas of the African Continent will be the focus of detailed discussion and exploration. Particular attention will be given to those areas which were the sources of Black population in the "new world." Both the African past and contemporary Africa will be dealt with.

2 • Group Exploration of Racism (2) Staff
Group discussions designed to explore, identify and understand the social and emotional pathology of racist orientations as they appear in everyday life. Discussions will focus on examinations of personal experiences, and extensive personal involvement and participation are expected. Not restricted to majors in Black Studies. Limited enrollment.

38 • The Afro-American Culture Experience Through Literature (3) Pigeon
A colloquium which examines themes and perspectives in Afro-American culture as embodied in various forms of original slave narratives. Limited enrollment.

48 • Workshop: Writing and the Afro-American Experience (4) Staff
Prerequisite: Consent of the instructor. The workshop is designed to give young writers an opportunity to write poetry and fiction according to their own interests. Students are required to read their work and subject it to critical appraiser, and to discuss craft, particularly as it operates within the Black American experience. (One hour for lecture and three hours for discussion.) Limited enrollment.

Upper Division courses

100 • The Social Institution of Communication (4) Anyanwu
This course is designed to offer the student a basic conceptual framework for analyzing the role of communication and initiating goal-oriented action within the Afro-American community.

101 • Black Legislators and Elected Officials in North America (4) Staff
Prerequisite: Upper Division standing or consent of instructor. This course is designed to acquaint the student with the peculiar problems of access to, and incumbency in, political office for the Black American. The distinctive vantage point of the Black legislator on major current social problems and issues will be critically examined and explored. Extensive use will be made of visiting legislators and elected officials. Both historical and comparative analysis will be emphasized.

102 • Black Radicals and the Radical Tradition (4) Staff
Prerequisite: Upper Division standing or consent of instructor. This course will examine the tradition of radical thought and the relevance of this thought to the needs and interests of the Black community. Several hypotheses related to radical thought will be formulated and analyzed in light of current events. In addition the lives and works of individual Black Americans who fall in this tradition will be discussed.

103 • The Politics of Black Liberation (4) Staff
This course seeks to provide an empirical and systematic explanation of the Black Liberation Movement in America. Emphasis will be placed on the concept of Black Power, the theories and current trends relating to the development of more extensive and effective control of those institutions that influence the lives and destinies of Black people.

104 • Political Action in the Black Community (4) Staff
An examination of actions and reactions of Black elected officials (in California) to public issues having particular relevance to the black community and the techniques and procedures adopted by the elected officials in response to community demands on these issues.

105 • An Introduction to African Nationalism (4) Anyanwu
An introduction to African Nationalism through comparative study of African Cultures.

107 • Ecological Perspectives in African Development (4) Anyanwu
An examination of the physical and natural determinants of Africa, and their relations to famine, economic development, communication and the survival of the animal kingdom. This course will also provide insight into the physical constraints of the African environment as they relate to economic productivity and the need for the preservation of life.

110 • Economic Theory, Practice and the Social Condition of the Black American (4) Staff
Prerequsite: Upper Division standing or consent of instructor. This course deals with national economic policy, the theory by which it is guided, and the manner in which this policy moulds the social condition of the Black American. Some attention will be given to the tradition in economic thought from which our national policy making derives.

113 • African Mythology and Religion (4) Anyanwu
The study of the mythical world of the African peoples and their original religious beliefs in life, death, and reincarnation. This course will acquaint students with the background of African culture and the spiritual forces which constitute the source of African conduct and behavior. Related political forms, artistic values, and religious rituals will also be examined.

114A • History of Jazz (4) Collins
This course will focus on the growth of jazz and its emergence as a distinctive form through related styles as work songs, blues and gospel music from the era of the 20's through the 60's. Jazz artists will be invited to perform. Students must be conversant with musical terminology. **This course is the same as Music/114, and can satisfy four units of the general education requirements in Fine Arts.**

115 • African Philosophy (4) Anyanwu
Prerequisite: Upper Division standing or consent of instructor. An examination of the philosophy of African peoples and its influence on religious, moral, and customary ideas and practices.

119 • Advanced Group Exploration of Racism (4) Staff
Prerequisite: Upper Division standing or consent of instructor. Like Black Studies/2, this course will explore the identity and understanding of the social and emotional pathology of racist orientations. However, the course will dwell more specifically on the problem and cause of racist pathology, both from an individual perspective and from an institutional perspective. Limited Enrollment.

120 • Social Psychology of Racism (4) Staff
Prerequisite: Upper Division standing or consent of instructor. This course will examine the effects of prejudice and discrimination on the victims of racism. The social sources of racist attitudes and practices of racial discrimination will be examined, as well as the effect of these attitudes and practices on personal growth and development. Relevant research studies will be used and a comparative emphasis taken in the course.

124 • Religion in Black America (4) Staff
This course of study is designed to provide a historical survey of major Black religious figures, organizations, movements, philosophies and issues. Emphasis will be placed on modern and contemporary religious phenomena in the Black religious community of the United States. The approach will be critical and comparative as exemplified in the required texts.

128 • Oral Tradition of the Afro-American Culture (4) Pigeon
This course is designed to acquaint the student with the oral traditions of Afro-American culture as expressed in Black idioms and folklore.

129 • Myth and Symbolism in Afro-American Literature (4) Staff
This course will explore the development of the mythic and symbolic imagination in some of the major works of Afro-American writers.

130A • French African Literature and Literary Figures (4) Pigeon
Prerequisite: Upper Division standing or consent of instructor. History of French African Literature with emphasis on its development in Africa and in the West Indies. The class will study the concept of negritude from its birth to the present. Among the writers whose work will be studied are: Birago Diop, Aime Cesaire, Frantz Fanon, Albert Memmi, Leopold Sedar Senghor. A reading knowledge of French will be helpful.

130B • French African Literature After The Independence (4) Pigeon
Prerequisite: Upper Division standing or consent of instructor. This class will acquaint the student with the new ideologies and tendencies which appear *After The Independence on the African Soil* and simultaneously in the *French West Indies.* Among the writers whose works will be studied are: Mongo Beti, Olympe Bhely Guenun, Camara Laye, Aime Cesaire, Charles Nokan, Fredinand Oyono.

132 • Seminar in Afro-American Literature (4) Staff
A comparative analysis of the different creative visions in Afro-American Literature. Selected authors and their work will be read intensely and students will prepare imaginative manuscripts based on the techniques of those writers. Upper division standing only.

133A • Introduction to West Indian Literature (4) Pigeon
Prerequisites: Upper Division standing or consent of instructor. This course will deal with the work of West Indian poets from the French speaking Islands of the West Indies. It will thus deal with the development of poetry in Haiti, Guadeloupe, Martinque with a brief escape to French Guyana.

133B • Introduction to West Indian Literature (4) Pigeon
Prerequisites: Upper Division standing or consent of instructor. This course will deal with the work of West Indian poets from the Spanish speaking Islands of the West Indies. It will thus deal with the development of poetry in Cuba and Puerto Rico.

133C • Introduction to West Indian Literature (4) Pigeon
Prerequisites: Upper Division standing or consent of instructor. This course will deal with the work of West Indian poets from the English speaking Islands of the West Indies. It will thus deal with the development of poetry in Jamaica and Trinidad.

134 • Seminar on Aime Cesaire (4) Pigeon
Prerequisite: Upper Division standing or consent of instructor. This course will be an in-depth study of plays, novel, poetry, and political treaties of this renowned Martinquais writer. The student will have to analyze and possibly act in plays like: *The Tragedy of King Christopher, A Season in the Congo, The Tempest,* the novel, *Return to My Native Land,* and the *Political Letter of Maurice Thorez.* Also, his speech on Colonialism will be analyzed.

140 • Ethnomusicology (4) Collins
Prerequisites: Upper Division standing or consent of instructor. The development of music in non-European cultures will familiarize the student with the ethnic origins of music in the Caribbean; describe the historical development of this music, and analyze the aspects if it which derive from the African, Afro-American, and Latin American peoples. This course can satisfy four units of the general education requirement in Fine Arts.

160A • Analyses of the Racist Experience (4) Staff
Using the Jewish, Black and minority group experiences, the course will seek to offer historical perspectives for a contemporary related analysis.

160B • White Racism and the African Continent (4) Staff
A survey course examining the white man's self-image in Africa. The consequences of colonialism leading to the contemporary experience of white racism, especially in Southern Africa, will be reviewed. Special attention will be given to apartheid and the Portuguese territories.

160C • The African Liberation Movements (4) Staff
The African reaction to the experience of colonialism and apartheid. A survey of African revolutionary movements with special emphasis on contemporary issues. The course will emphasize the theoretical as well as the practical bases of African revolutionary movements.

176 • Black Politics in America (4) Staff
A general survey of political phenomena in the Black community. American political institutions, law, legislation and administration will be examined in theory and practice to determine their function in relation to Black politics. **This course is the same as Political Science/176.**

195A • Community Involvement (4) Staff
Prerequisite: Consent of the department. This is a field study course designed to acquaint the student with correctional facilities, civic agencies and community organizations and their functions. Special emphasis will be devoted to the Black community and those organizations in the broader community that directly affect its welfare.

195B • Community Involvement (4) Staff
Prerequisite: Consent of the department. This field study course will provide students an opportunity for an in-depth exploration of community agencies and organizations. Students will be able to participate in authorized programs of several correctional facilities.

197 • Field Research (4) Staff
Prerequisite: Upper Division standing or consent of instructor. This course is designed to acquaint students with the actuality of selected aspects of the Black American experience. Selected areas of the local community will be the focus of research attention in the course. Relevent research of this experience will be required of each student. Open only to

students who have completed lower division course requirements.

*198 • **Senior Seminar** (4) Staff
Prerequisite: Upper Division standing or consent of instructor. Enrollment limited. Reading and discussion will be centered around a single topic or problem to be announced in advance by the instructor.

*199 • **Independent Studies in Black Studies** (1,5) Staff
Prerequisite: Senior standing. Admission by special permission of the department only. 199 courses are limited to not more than five units in one quarter and no more than 12 units total.

Chemistry

Professors

Ernest L. Bickerdike, Ph.D., USC *(Emeritus).*
Thomas C. Bruice, Ph.D., USC; bio-organic chemistry.
Clifford A. Bunton, Ph.D., University College (London); organic chemistry.
Robert H. DeWolfe, Ph.D., Texas; organic chemistry.
Joseph O. Hirschfelder, Ph.D., Princeton; theoretical physical chemistry (Adjunct).
Bernard Kirtman, Ph.D., Harvard; theoretical physical chemistry.
Glenn H. Miller, Ph.D., Brown; physical chemistry.
Roger C. Millikan, Ph.D., Berkeley; physical chemistry.
Henry W. Offen, Ph.D., UCLA; physical chemistry.
Glyn O. Pritchard, Ph.D., Manchester (England); physical chemistry (Chairman).
Bruce F. Rickborn, Ph.D., UCLA; organic chemistry.
Pierce W. Selwood, Ph.D., Illinois *(Emeritus).*

Associate Professors

Curtis B. Anderson, Ph.D., UCLA; organic chemistry.
Michael T. Bowers, Ph.D., Illinois; physical chemistry.
Peter C. Ford, Ph.D., Yale; inorganic chemistry.
J. Thomas C. Gerig, Ph.D., Brown; biological chemistry.
David O. Harris, Ph.D., Berkeley; physical chemistry.
William C. Kaska, Ph.D., Michigan; inorganic chemistry.
John H. Kennedy, Ph.D., Harvard; inorganic-analytical chemistry.
Richard M. Martin, Ph.D., Wisconsin; physical chemistry.
William E. Palke, Ph.D., Harvard; theoretical physical chemistry.

Assistant Professors

Donald H. Aue, Ph.D., Cornell; organic chemistry.
Thomas M. Hooker, Jr., Ph.D., Duke; bio-physical chemistry.
R. Daniel Little, Ph.D., Wisconsin; organic chemistry.
Stanley M. Parsons, Ph.D., California Institute of Technology; biological chemistry.
Daniel L. Purich, Ph.D., Iowa State; biological chemistry.
Richard J. Watts, Ph.D., Colorado; inorganic chemistry.

Concerns of the department

The curricula in chemistry provide excellent undergraduate preparation for careers in chemical research and teaching, medicine, environmental and industrial law, technical management, and environmental fields. The department offers programs leading to either the B.A. or B.S. degree. Both of these bachelor degree programs meet the standards recommended by the American Chemical Society for professional education in chemistry. The B.S. degree is recommended for students planning professional careers in chemistry, whereas the B.A. degree may be more suitable for students with other career goals.

Each entering student will be assigned an advisor who may be consulted on any matter pertaining to the student's University work. The advisor should approve the student's program. Waivers and substitutions of chemistry requirements must be discussed with the advisor.

There is a Willard L. McRary Prize in Chemistry given to a graduating senior whose attainment in chemistry is outstanding and which reflects the promise of high quality scientific attainment, such as that which characterized the career of Professor McRary.

For more detailed descriptions of the specific undergraduate programs, and the graduate programs with emphasis in Chemistry, please see the details which are given below.

Bachelor of Arts

General Education

Students in the Bachelor of Arts program in chemistry must fulfill all of the General Education requirements for this degree as described in the Letters and Science section of this catalog. Courses are required in preparation for the chemistry major which will automatically satisfy Area B, Natural Science and Mathematics, in the General Education program.

Preparation for the major

Chemistry/1A—B—C; 1AL—BL—CL; 6A—B—C; Math/3A—B—C; Physics/8A—B—C; 8AL—BL—CL.

A reading knowledge of a foreign language (German is particularly useful) is strongly recommended for students planning advanced study in science. However, it is not required for undergraduate professional education in chemistry.

Upper Division major

Chemistry/130A—B—C; 113A—B—C; 114A—B; 150, 150L. Additional courses to complete the major in chemistry will be taken by the student after individual consultation with the advisor. A minimum of 12 additional units will be taken, normally including one organic chemistry course, one inorganic chemistry and one upper division laboratory course, but some of these units may be taken in other departments. Juniors and seniors should consult the junior or senior advisor respectively. The senior advisor approves the chemistry elective units for graduation as well as waivers or substitutions of requirements. A student who has transferred from another school should consult the appropriate advisor as soon as possible after arrival.

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*See L-2 for 198/199 independent studies unit limitations.

Bachelor of Science

General Education

See the College of Letters and Science (Chapter G) for the general education requirements for the Bachelor of Science degree.

Preparation for the major

Chemistry/1A—B—C; 1AL—BL—CL; 6A—B—C; Mathematics/3A—B—C; 5A—B; Physics/8A—B—C; 8AL—BL—CL.

A reading knowledge of a foreign language (German is particularly useful) is strongly recommended for students planning advanced study in science. However, it is not required for undergraduate professional education in chemistry.

Upper Division major

Chemistry/130A—B—C; 113A—B—C; 114A—B; 150, 150L. Additional courses to complete the major in chemistry will be taken by the student after individual consultation with the advisor. A minimum of 18 additional units will be taken, normally including two physical chemistry courses, one organic chemistry course, two inorganic chemistry courses and one upper division laboratory course, but some of these units may be taken in other departments. Juniors and seniors should consult the junior or senior advisor respectively. The senior advisor approves the chemistry elective units for graduation as well as waivers or substitutions of requirements. A student who has transferred from another school should consult the appropriate advisor as soon as possible after arrival.

Cooperative program — Chemistry and Chemical Engineering

Chemistry students who are interested in an industrial career are advised to consider a five-year program leading to B.S. degrees in both Chemical Engineering and Chemistry. Students may obtain details of the program from the Department of Chemistry or the Department of Chemical and Nuclear Engineering. Students are advised to consider applying for simultaneous registration in Colleges of Letters and Science and Engineering in order to complete B.S. programs in Both Engineering and Chemistry.

Suggested course schedule for Freshmen (B.S. or B.A.)

1st Quarter		2nd Quarter		3rd Quarter	
Units	Course	Units	Course	Units	Course
4	Chem/1A—1AL	4	Chem/1B—1BL	4	Chem/1C—1CL
4	Math/3A	4	Math/3B	4	Math/3C
4	English/1A	4	English/1B	-	Gen. Education
-	Gen. Education	-	Gen. Education		

Master of Arts

See *The Graduate Division Announcement.*

1. The M.A. in chemistry may be attained under either Plan I (thesis based on research) or Plan II (examination).
2. The candidate must demonstrate a reading knowledge of scientific literature in one of three foreign languages chosen from German, French and Russian.

Doctor of Philosophy

See *The Graduate Division Announcement.* The Ph.D. may be obtained in any one of the special fields of Physical Chemistry, Bio-Organic, Organic and Inorganic Chemistry.

1. There is no formal unit requirement for the Ph.D. In addition to courses within the area of specialization, the candidate will normally take at least one advanced course in each of two areas outside his field.
2. Progress toward the degree is followed by a series of cumulative examinations in the field of specialization.
3. The candidate must demonstrate a reading knowledge of scientific German, French or Russian.

The B. R. Baker Memorial Fellowships in Chemistry

To be awarded, on the basis of need, to graduate students in the Department of Chemistry who have given strong indication by their graduate or undergraduate records that they will make continued and substantial contributions to the progress of organic, medicinal and biological chemistry.

A John H. Tokuyama Memorial Loan Fund is available specifically for graduate chemistry students at UCSB administered as short-term or emergency loans.

Cooperative program

Graduate Studies in Biochemistry and Molecular Biology: This program is sponsored jointly by the Departments of Chemistry and Biological Sciences. Details are listed under Biochemistry and Molecular Biology.

Career opportunities

See *"Concerns of the Department"* section.

Teaching credentials

Students who complete a major in this department may be eligible for pursuing a California teaching credential. Consult with the department credential adviser Mr. Glenn H. Miller, in Chemistry for specific departmental requirements.

Specific details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office.*

Correspondence information

Department of Chemistry, Chemistry Building, Room 1005, University of California, Santa Barbara, California 93106. Phone: (805) 961-2931.

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*See inside front cover for address.

Chemistry

Lower Division courses

1A—B—C • General Chemistry (3,3,3) Staff
Prerequisites: one year of high school algebra and exponents and logarithms. Lecture, three hours. High school chemistry and physics are strongly recommended. Knowledge of the calculus is useful but not necessary. Concurrent registration in 1AL, 1BL, is required, or consent of instructor. This course is required of all majors in chemistry and most other fields of science or technology. **A: Stoichiometry,** gas laws and kinetic theory, atomic and molecular structure, the periodic table, nature of solids, liquids, and solutions, phase equilibria. **B. Thermodynamics** (1st and 2nd Laws), reaction kinetics, thermochemistry, oxidation and reduction, electrochemistry, chemical equilibrium. **C:** Structure and dynamics of the elements and their compounds.

1AL—BL—CL • General Chemistry Laboratory (1,1,1) Staff
Prerequisite: Concurrent registration in 1A—B—C or consent of instructor. Laboratory, four hours. Quantitative measurements demonstrating principles and developing laboratory technique. Inorganic qualitative analysis. Inorganic synthesis.

Contemporary Natural Science (Natural Science 1A—B—C) (4,4,4) Anderson
Sequence beginning I. For course description see Natural Science listing.

6A—B—C • Laboratory Methods of Organic Chemistry (2,2,2) Staff
Prerequisite: for 6A: Chemistry/130A or 8A (may be taken concurrently). Students whose requirements include only 6A and 6B, are urged to take 6A in the winter quarter. Chemistry/6A: lecture, one hour; laboratory, four hours. Chemistry/6B—C: laboratory, eight hours. Distillation, crystallization, extraction, determination of physical properties, organic synthesis, identification of organic compounds, instrumental methods in organic chemistry.

8A—B • Fundamentals of Organic Chemistry (3,3) Purich, Parsons
Prerequisites: Chemistry/1A—B or consent of instructor. Lecture, three hours. Basic organic chemistry: structure and chemical bonding, nomenclature, classes of organic compounds, organic reactions, stereochemistry, natural products, elementary biochemistry. Designed primarily for biological sciences majors.

20 • Science and Society (3) Kirtman
Lecture, two hours; Discussion, 1 hour. The role of science and technology in society as exemplified by the arms race, environmental pollution, etc., is traced from the birth of modern science through the big expansion associated with World War II and culminating in the technological-social crisis of today. Applicable only to the B-2 area of General Education requirements.

25 • Introductory Chemistry (4) Staff
Lecture, four hours. This course is designed to meet the non-science major's general education requirement in the physical sciences. The course may also serve as background preparation for Chemistry/1A. The course includes such basic topics as Atomic Theory, Weight Relations, Nomenclature, Chemical Bonding, Kinetic Molecular Theory, Gas Laws, Solutions, and related areas of modern chemistry. (Not open to students who have completed Natural Science/1B.)

90FS • Freshman Seminar (2) Miller, Anderson, Kennedy, Hooker
Seminar, two hours. Informal discussion limited to 10 students in each section. Each participating faculty member will conduct one section. Subjects will include current technological and environmental problems, and recent advances in basic and applied chemistry.

91 • Undergraduate Seminar (1) Staff
Prerequisite: Chemistry/1A—B or concurrent registration. Seminars for undergraduates presented by faculty and/or students. May be repeated once for credit.

99 • Introduction to Research (1-3) Staff
Prerequisite: Consent of Instructor and Undergraduate Advisor. Directed study, normally experimental, to be arranged with individual faculty members. Course offers exceptional students an opportunity to participate in a research group. The student will learn basic techniques and the operation of instruments used in research. The course may be repeated to a maximum of six units.

Each faculty member has a unique letter designation which is the same as for the 594-599 series.

Upper Division courses

101 • Problems in Environmental Chemistry (3) Ford
Prerequisite: ES/1 and 5 , or one of the following: Chemistry/1B, Chemistry/25, or Natural Science/1B. Lecture, three hours. The chemistry of air, water, and soil pollution: sources and methods of control; chemical dynamics in the environment; chemical and instrumental methods of analytical pollution monitoring; chemical quality standards and their maintenance.

Open to Chemistry majors for credit but cannot be used to satisfy required Chemistry electives. **This course is the same as Env. Sts/101.**

Applicable only to the B-2 area of General Education requirements.

113A—B—C—D • Physical Chemistry (3,3,3,3) Martin, Millikan, Offen, Palke, Pritchard
Prerequisite: Chemistry/1A—B—C, Mathematics/3A—B—C and Physics/8, or by consent of instructor. Lecture, three hours. **A:** Laws of thermodynamics; free energy and chemical equilibria; change of state; solution and phase equilibria; **C:** Kinetic theory of gases; chemical kinetics; **B:** Introduction to wave mechanics; atomic structure and spectra; the chemical bond; molecular spectra and structure; **D:** Properties of liquids and solutions; crystal structure; nuclear and radiation chemistry; electrochemistry; surface chemistry, polymers.

113AG—BG—CG—DG • Physical Chemistry (3,3,3,3) Martin, Millikan, Offen, Palke, Pritchard
Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 113A—B—C or the respective part thereof in this institution. Lecture, three hours.

114A—B • Physical Chemistry and Instrumental Analysis Laboratory (4,4) Bowers
Prerequisite: Chemistry/114A; 150—150L or equivalent, Chemistry/113A concurrently with 113B. Lecture, one hour; discussion, one hour, laboratory, eight hours. Lecture: Technique of physical measurement, error analysis and statistics, special topics. Laboratory: Experiments involving ultraviolet, infrared, and nuclear magnetic resonance spectroscopy; dipole moment, magnetic susceptibility, light scattering, viscosity of polymers; calorimetry, gas laws, thermal conductivity, phase diagrams; solution kinetics; electroanalytical and chromatographic techniques.

115A—B—C • Fundamentals of Quantum Chemistry (3,3,3) Palke
Prerequisites: Chemistry/113A—B—C, Mathematics/5A or consent of Instructor. Lecture, three hours. **A:** Introduction to Quantum Mechanics-Postulatory Approach; particle in box, on ring, harmonic oscillator; linear operator theory, matrix algebra; hydrogen atom; perturbation theory, variation theory; applications. **B:** Molecular orbital theory and valence bond theory; Huckel theory (secular equn.) applications to conjugated systems, electronic spectra, and term symbols; introduction to infrared, Raman, and microwave spectroscopy. **C:** Introduction to NMR, EPR, Group Theory; applications.

115AG—BG—CG • Fundamentals of Quantum Chemistry (3,3,3) Palke
Prerequisite: Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 115A—B—C in this institution. Lecture, three hours.

117 • Statistical Thermodynamics. (3) Hooker, Kirtman, Offen
Prerequisite: Chemistry/113A—B—C or consent of instructor. Lecture, three hours. Fundamentals of statistical thermodynamics, partition functions for ideal gases and crystals, quantum statistics, calculations of thermodynamic properties.

117G • Statistical Thermodynamics (3) Hooker, Kirtman, Offen
Prerequisite: Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 117 at this institution. Lecture, three hours.

118 • Photochemistry and Radiation Chemistry (3) Martin, Millikan, Offen
Prerequisite: Chemistry/113B. Lecture, three hours. Interaction of light and matter, reaction paths from electronically excited molecules, flash photolysis, high energy radiation.

118G • Photochemistry and Radiation Chemistry (3) Martin, Millikan, Offen
Prerequisite: Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 118 at this institution. Lecture, three hours.

120 • Polymer Chemistry (3) Miller
Prerequisite: Chemistry/1A—B—C; 1AL; BL; CL; 130A—B—C. Lecture, three hours. Mechanism and kinetics of polymerization: Vinyl, condensation, and diene polymers; ionic polymerizations; block and graft polymers; copolymerization; physical chemistry of high polymers; polymer degrations; radiation chemistry of polymer systems.

123 • Fundamentals of Environmental Chemistry (3) Millikan, Staff
Prerequisites: Chemistry/1A—1B—1AL; BL; CL; 8A—B, or 130A—B—C; 113A—B. Lecture, two hours, discussion, two hours. Chemical nature of pollution sources. Principles of analytical monitoring and control of pollution sources. The chemistry of pollutants in the environment. Chemical quality standards and chemical monitoring of the environment. Not offered every year.

130A—B—C • Elementary Organic Chemistry (3,3,3) Aue, DeWolfe, Rickborn
Prerequisite: Chemistry/1A—B—C, or consent of instructor. Chemistry/6A—B—C is to be taken concurrently. If student's major does not require 6C, then 6A—B may be deferred to winter or spring quarters. Lecture, three hours. Structure and properties of organic compounds, nomenclature, classes of organic compounds, chemical bonding, synthetic organic chemistry, chemistry of natural products.

130AG—BG—CG • Elementary Organic Chemistry (3,3,3) Aue, DeWolfe, Rickborn
Open only by consent of the chemistry graduate advisor to graduate students who have not taken 130A—B—C at this institution. Lecture, three hours.

131A—B—C • Advanced Organic Chemistry. (3,3,3) Ander-

son, Bunton, Rickborn
Prerequisite: Chemistry/130A—B—C and 113A—B—C, or consent of instructor. Lecture, three hours. **A:** Physical organic chemistry-mechanism, stereochemistry, structure and reactivity. **B** and **C:** Mechanism and synthesis in organic chemistry.

131AG—BG—CG • Advanced Organic Chemistry (3,3,3) Anderson, Bunton, Rickborn
Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 131A—B—C in this institution. Lecture, three hours.

134 • Advanced Organic Laboratory (3) Aue
Prerequisites: Chemistry/130A—B—C and Chemistry/6A—B—C or consent of instructor. Lecture, one hour; laboratory, eight hours. Methods of organic reactions and synthesis; techniques of product isolation. Not offered every year.

136 • Qualitative Organic Analysis (2) Aue, DeWolfe, Rickborn
Prerequisite: Chemistry/130A—B—C and Chemistry/6A—B—C, or consent of instructor. Lecture, 2 hours. Identification of unknown organic compounds; separation of mixtures; derivatives, instrumental methods; micro techniques.

136L • Qualitative Organic Analysis Laboratory (2) Aue, DeWolfe, Rickborn
Prerequisite: Concurrent registration in Chemistry/136. Laboratory, eight hours.

137 • Organometallics in Organic Synthesis (3) Kaska
Prerequisite: Chemistry 130A—B—C. Lecture, 3 hours. A study of the synthesis of organic compounds where the starting material or intermediate is a substance having a carbon-metal bond.

137G • Organometallics in Organic Synthesis (3) Kaska
Prerequisite: Chemistry 130A—B—C. Lecture, 3 hours. A study of the synthesis of organic compounds where the starting material or intermediate is a substance having a carbon-metal bond. Open only by consent of the chemistry graduate advisor to graduate students who have not taken Chemistry 137 in this institution.

141 • Bio-Organic Reactions (3) Bruice
Prerequisite: Chemistry/130A—B—C, Chemistry/113A—B—C, or consent of instructor. Biology/108 is recommended. Lecture, three hours. A lecture course in bio-organic mechanisms. The types of chemical transformations of importance in biochemical reactions will be discussed from a physical organic point of view. Mechanisms of nucleophilic displacement reactions on carbonyl and pentacovalent phosphorous, hydration reactions, chemical reactions of cofactors, enzymic catalysis and enzyme models are among the topics considered.

150 • Analytical Chemistry (2) Kennedy
Prerequisites: Chemistry/1A—B—C or consent of instructor. Lecture, two hours. Principles of analytical chemistry including classical techniques, spectrophotometry, electroanalytical techniques and separation processes. Library research report..

150L • Analytical Chemistry Laboratory (3) Kennedy
Prerequisite: Concurrent registration in Chemistry/150 or consent of instructor. Laboratory, eight hours. Students will perform experiments in several areas of analytical chemistry including gravimetric, volumetric, electroanalytical, spectrophotometric and separation techniques. Analyses of water, blood, consumer products, and industrial alloys are carried out.

151 • Advanced Analytical Chemistry (3) Kennedy
Prerequisite: Chemistry/150. Lecture, three hours. A detailed discussion of principles of analytical chemistry with emphasis on acid-base and redox equilibria, and on separation. Not offered every year.

173A—B • Advanced Inorganic Chemistry (3,3) Ford, Kaska
Prerequisite: Chemistry/113A—B—C or consent of instructor. 173A is not a prerequisite for 173B. Lecture, three hours. A: Inorganic and organometallic chemistry of the non-transition elements and their compounds: descriptive reaction chemistry, bonding theory, stereo-chemistry and introductory spectroscopy. B: Inorganic and organometallic chemistry of the transition metals and their complexes: introductory ligand field theory and spectroscopy, descriptive chemistry, and reaction mechanisms.

173AG—BG • Advanced Inorganic Chemistry (3,3) Ford, Kaska
Open only by consent of the chemistry graduate advisor to graduate students who have not taken 173A—B in this institution. Lecture, three hours.

174 • Inorganic Synthesis and Laboratory Techniques (3) Kaska
Prerequisite: 173A—B (may be taken concurrently) or consent of instructor. Lecture, 1 hour; laboratory, eight hours. Methods of inorganic reactions and synthesis. Spectroscopic indentification of inorganic compounds.

175 • Physical-inorganic Chemistry (3) Watts, Ford
Prerequisite: 173A—B or consent of instructor. Lecture, three hours. Bonding theory, thermodynamics, and structure of inorganic compounds. Applications of physical techniques to the study of inorganic (and organo-metallic) reactions and their mechanisms.

175G • Physical-Inorganic Chemistry (3) Watts, Ford
Open only by consent of the Chemistry Graduate Advisor to graduate Students who have not taken 175 in this institution. Lecture, three hours.

184 • Chemical Literature (2) Antony
Lecture, two hours; discussion, one hour. Lectures and exercises on the literature and other information resources of use in chemistry.

184G • Chemical Literature (2) Antony
Lecture, two hours; discussion, one hour. Lectures and exercises on the literature and other information resources of use in chemistry. Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 184 at this institution.

195AA—ZZ • Chemical Instrumentation (3-5) Staff
Prerequisite: Consent of instructor and undergraduate advisor. Discussion, one hour; laboratory six to twelve hours. With guidance from a faculty member the student will learn advanced laboratory techniques by independent experimental work and weekly consultations with the instructor. This course may be used to satisfy the upper division laboratory requirement. Each faculty member has a unique letter designation which is the same as for the Chemistry 596 series.

196AA—ZZ • Special Courses (1-4) Staff (Kennedy in charge)
To be taken with the consent of the instructor and the undergraduate adviser of the department as a means of meeting special curricular problems. Each faculty member has a unique letter designation which is the same as for the 594—599 series.

***199AA—ZZ • Independent Studies in Chemistry** (1-5) Staff (Kennedy in charge)
Prerequisites: Upper Division standing and consent of both instructor and undergraduate adviser. Directed study, normally experimental, to be arranged with individual faculty members. 199 courses are limited to no more than 5 units in one quarter. Each faculty member has a unique letter designation which is the same as for the 594—599 series.

Graduate Courses

212 • Chemical Dynamics (3) Martin, Millikan
Prerequisite: Consent of instructor. Lecture, three hours. Potential energy surfaces, collision dynamics, derivation of reaction-rate expressions, relaxation rates and methods, bimolecular atom-transfer reactions, unimolecular reactions, theory of complex reactions, bimolecular energy transfer.

213 • Advanced Thermodynamics (3) Staff
Prerequisite: Consent of instructor. Lecture, three hours. Emphasis on irreversible processes. Review of classical thermodynamics, definition of flows and forces; conservation laws; local entropy production; phenomenological equations relating flows and forces; Onsager's reciprocal relations; principle of minimum entropy production. Applications to problems of biological and physical interest.

214A—B • Statistical Mechanics (3,3) Hooker
Prerequisite: Consent of instructor. Lecture, three hours. **A:** Theoretical basis of classical and quantum statistical mechanics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics. Partition functions. Calculation of thermodynamic properties of ideal systems. **B:** Applications—diatomic molecules, nuclear spin statistics, polyatomic molecules, solid state, fluctuation theory, imperfect gases, liquids.

215A—B • Principles of Quantum Mechanics (3,3) Kirtman, Palke
Prerequisite: Consent of instructor. Lecture, three hours. The failures of classical theory. The Schrodinger equation, wavefunctions, and their interpretation. Free particles and wave packets. Interaction of particle and potentials. Coulomb potential. Harmonic Oscillator. Angular Momentum. Perturbation Theory. Systems of Identical Particles. Time Dependent Perturbation Theory.

216 • Selected Topics in Quantum Chemistry (1-4) Harris, Kirtman, Palke
Prerequisite: Consent of instructor. Lecture, 1-4 hours. A selected topic will be discussed. Examples: applications of group theory, electronic structure, scattering. Course may be repeated with a different topic (18 units maximum).

219 • Selected Topics in Physical Chemistry (1-4) Bowers, Harris, Hooker, Kirtman, Martin, Miller, Millikan, Offen, Palke, Pritchard
Prerequisite: Consent of instructor. Lecture, 1-4 hours. A selected topic will be discussed. Examples: magnetic resonance, condensed phases, kinetic spectroscopy. Course may be repeated with a different topic (18 units maximum).

230 • Modern Instrumental Techniques in Organic Chemistry (3) Staff
Prerequisite: Graduate standing or consent of instructor. Lecture, three hours. Practical spectroscopy including infra-red and ultraviolet, but with primary emphasis on nuclear magnetic resonance, electron spin resonance, and mass spectroscopy. Not offered every year.

231 • Advanced Physical Organic Chemistry (3) Bunton, DeWolfe
Prerequisite: Consent of instructor. Lecture, three hours. Study of the structural and environmental factors which influence the course of chemical reactions of organic compounds.

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*See L-2 for 198/199 independent studies unit limitations.

232 • Carbonium Ions (3) Bunton, DeWolfe
Prerequisite: Graduate standing or consent of instructor. Lecture, three hours. Reactions and rearrangement of carbonium ions; non-classical ions; allylic ions. Not offered every year.

233 • Advanced Synthetic Chemistry (3) Aue
Prerequisite: Consent of instructor. Lecture, three hours. A comprehensive discussion of modern synthetic organic methods. Including the applications of addition, condensation, substitution and rearrangement reactions. Not offered every year.

234 • Carbanions (3) Kaska, Rickborn
Prerequisite: Graduate standing or consent of instructor. Lecture, three hours. Chemistry of carbanions, electrophilic substitution at saturated carbon, organometallic compounds of groups I and II, A and B, and IIIA. Not offered every year.

235 • Conformational Analysis (2) Rickborn, Anderson
Prerequisite: Graduate standing or consent of instructor. Lecture, two hours. Conformational effects in the structure and reactivity of organic compounds. Not offered every year.

236 • Molecular Orbital Theory (3) Staff
Prerequisite: Graduate standing or consent of instructor. Lecture, three hours. Applications of molecular orbital theory to organic chemistry. Not offered every year.

238 • Selected Topics in Natural Products (3) Staff (Aue in charge)
Prerequisite: Consent of instructor. Lecture, 3 hours. Selected topics from Natural Products. The contents of this course will vary. Course may be repeated with different topic. (18 units maximum).

239 • Selected Topics in Organic Chemistry (3) Staff (Anderson in charge)
Prerequisite: Consent of instructor. Lecture, three hours. Selected topics from organic chemistry. The contents of this course will vary. Course may be repeated with different topics (18 units maximum).

242 • Terpenes (2) Aue
Prerequisite: Graduate standing or consent of the instructor. Lecture, two hours. The occurrence, isolation, structural elucidation, reactions and biogenesis of terpenes. Not offered every year.

243 • Steroids (2) Aue
Prerequisite: Graduate standing or consent of the instructor. Lecture, two hours. The occurrence, structural elucidation, reactions and synthesis of steroids. Not offered every year.

244 • Carbohydrates (3) Staff
Prerequisite: Chemistry/233 or equivalent. Lecture, three hours. Chemical replacement of one or more hydroxl functions of sugars by such groups as amino, deoxy, or thio. Conversion of straight chain to branched chain sugars. Inversion of configuration. Blocking technics to perform these reactions on a single hydroxyl group. Not offered every year.

250 • Seminar in Biological Chemistry (2) Staff
Prerequisite: Consent of instructor. Lecture, two hours. Presentation of seminar in the areas of Biophysical, Bio-Organic, or Biological Chemistry. May be substituted for Chemistry/290 requirement.

251A—B • Chemical Aspects of Biological Systems (3,3) Bruice, Parsons, Purich
Prerequisite: Consent of instructor. Open to undergraduates by petition. Lecture, three hours. **A:** Molecules of Biochemical importance. A survey of physical, chemical, and dynamic properties of biological macromolecules and other molecules of significance to biochemistry. **B:** Chemical aspects of intermediary metabolism. The chemistry of anabolic and catabolic pathways for nucleic acids, proteins, and cofactors.

252 • Enzyme Dynamics (3) Purich
Prerequisite: Chemistry/251A—B or consent of instructor. Lecture, three hours. Study of the dynamics of reactions involving biological macromolecules. A kinetic approach to enzyme mechanisms and enzyme-macromolecule interactions.

254A—B • Magnetic Resonance Techniques in Biological Systems (3,3) Staff
Prerequisite: Consent of instructor. Lecture, three hours. A discussion of the theory and practice of magnetic resonance methods currently used in studies of proteins, nucleic acids and polysaccharides both individually and in complex structures such as membranes. NMR and EPR techniques will be included but the emphasis will be on high-resolution ^{1}H and ^{13}C spectroscopy. Normally offered in alternate years.

255A—B—C • Methods in the Characterization of Biological Macromolecules (3,3,3) Cassman, Hooker, Lee
Prerequisite: Physical chemistry, biochemistry, calculus, or consent of instructor. Lecture, two hours; Discussion, one hour. **A:** Introduction to biophysical chemistry. Macromolecular structure and conformation, intermolecular interactions, and multiple equilibria. **B:** Theory and practice of physical methods employed to study macromolecules. Spectroscopic techniques, including ORD, CD, UV, fluorescence, and phosphoresence, NMR and ESR. **C:** Theory and practice of physical methods employed to study macromolecules. Hydrodynamic properties, including sedimentation, diffusion, viscosity, osmotic pressure. Chemistry 255C is the same as Biology 205.

258 • Mechanisms of Organic and Enzymatic Reactions (3) Bruice
Prerequisite: Consent of instructor. Lecture, three hours. Formal presentation of seminars on recent literature dealing with mechanisms of organic and enzymatic reactions accompanied by open discussion of the topics considered.

259 • Selected Topics in Biological Chemistry (1-4) Staff
Prerequisite: Consent of instructor. Lecture, one to four hours. Selected topics from Bio-Organic, Biophysical, or Biological Chemistry. The contents of this course will vary. Course may be repeated with a different topic.

261A—B—C • Enzyme Mechanisms (3,3,3) Bruice, Parsons
Prerequisite: Chemistry/251A—B; 252, or consent of instructor. Lecture, three hours. Presentation of the chemistry, structure, and function of enzymes followed by discussion of pettinent organic model systems relating to the specific enzymes. Normally offered in alternate years.

273 • Structural Inorganic Chemistry (3) Staff
Prerequisite: Consent of instructor. Lecture, three hours. Molecular aggregation and structural analysis. Theories of properties and experimental determination of structure; applications to solid state chemistry; heterogeneous catalysis. Not offered every year.

279 • Selected Topics in Inorganic Chemistry (3) Staff (Ford in charge)
Prerequisite: Consent of instructor. Lecture, three hours. Selected topics from inorganic chemistry. The content of these courses will vary. Course may be repeated with different topics. (18 units maximum)

290 • Seminar in Chemistry (2) Staff
Prerequisite: Consent of instructor. Lecture, one hour. Presentation of seminar required of all chemistry graduate students. Course may be repeated.

291 • Special Seminar in Chemistry (2) Staff
Prerequisite: Consent of instructor. Lecture, one hour. Specialized seminar topics. May be repeated.

594AA—594ZZ • Special Topics (1-4) Staff
Special seminar on research subjects of current interest.

595AA—595ZZ • Group Studies (2) Staff
Critical review of research in selected fields. Regular meetings are held in which the student presents for discussion information from the recent chemical literature.

596AA—596ZZ • Directed Reading and Research (2-12) Staff
Individual tutorial. Instructor usually student's major professor. A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division. No more than half the units necessary for the master's degree may be taken in 596.

597AA—597ZZ • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-3) Staff
Instructor should be the student's major professor or chairman of his doctoral committee. No unit credit allowed toward advanced degree(s). S/U grade.

598AA—598ZZ • Master's Thesis Research and Preparation (1-12) Staff
Only for research underlying the thesis, writing the thesis. Instructor should be the chairman of the student's thesis committee. No unit credit will be given. S/U grade.

599AA—599ZZ • Ph.D. Dissertation Preparation (1-12) Staff
Only for preparation of the dissertation. Instructor should be the chairman of the student's doctoral committee. S/U grade.

Chicano Studies

Acting Assistant Professors

Mario Garcia, M.A., Texas; history.
Fernando V. Padilla, M.A., Nevada; political science.

Lecturers

Jorge A. Huerta, Ph.D., UCSB; dramatic art.
Salvador Rodriguez del Pino, M.A., UC Irvine; Hispanic studies.
Richard R. Valencia, M.A., UCSB; education.

Concerns of the department

The Department of Chicano Studies is engaged in an interdisciplinary program which subjects to critical analysis the Chicano reality: psychological, social, economic, political, historical, educational, linguistic and artistic.

In seeking to understand the Chicano present, the program delves into significant periods of Mexican and Southwestern U.S. history; for example, the U.S. War against Mexico: 1846-48; and the Conquest: 1848 to present. To better understand the nature of contemporary Chicano culture, the program probes still further into the historical past: into the roots of tradition reaching as far back as the pre-Columbian cultures of Mexico, which are part of the broader context of Latin American history and culture.

The interdisciplinary character of the curriculum is an innovative feature of the program. Professionally, this program provides a means for training leaders, both inside and outside the minority communities, who are able to deal with Chicano affairs and needs. This program is also designed to provide systematic instruction for those who wish to pursue concentrated study of the Chicano experience. The instructional objectives have a dual purpose: to serve the educational and cultural needs of Chicano communities and to create "awareness" in the Anglo community. The bilingual nature of this program is still another innovation which the Department has stressed. At present all language courses are taught in Spanish, a characteristic feature of the program. Student involvement in planning and development of the program is also a feature of Chicano Studies.

Career opportunities

The creation of the Department of Chicano Studies represents the legitimization of the study of the Chicano as a distinct field of study within the College of Letters and Science. The program is designed for students desiring a broadly based education that focuses upon the Chicano experience in a specialized manner. It is especially recommended to those planning careers of special importance for the Chicano community: education, law, medicine, civil and social services. It is also designed for the student who plans to pursue graduate studies in the humanities and social sciences.

Correspondence information

Department of Chicano Studies, Bldg. 406, University of California, Santa Barbara, California 93106. Phone: (805) 961-4040.

Chicano studies

Lower Division courses

1A—B—C • Introduction to Chicano Studies (4,4,4) Staff
An introduction to the historical and contemporary development of the Chicano community, interdisciplinary in nature and focusing upon such components as the educational, sociological, and political. The course will critically analyze the societal context in which La Raza has sought to maintain and develop its culture.

12 • Chicano Spanish Conversation (4) Rodriguez Del Pino
Prerequisite: Instructor's consent. Emphasis will be given to the acquisition of oral skills, comparative studies on pronunciation, difficult grammatical idiomatic expressions and Chicano Spanish lexicon.

Upper Division Courses

101A—B • History of the Chicanos (4,4) Garcia
The history of the Chicanos, 1821 to the present; traces the social-cultural lifeline of the Mexicans who have lived north of Mexico. **This course is the same as History 101A—B.**

101Q • Special Studies in Chicano History (4) Garcia
Prerequisite: Instructor's consent. Studies in selected aspects of Chicano history, with an emphasis on social and economic history. **This course is the same as History 101Q.**

115 • Psychological Issues and the Chicano Child (4) Valencia
To give the student an understanding of the fundamentals of psychology; to introduce the fundamentals of child psychology; and to analyze and discuss pertinent psychological principles and research related to the Chicano child.

120 • Bilingualism and the Chicano (4) Rodriguez del Pino
Prerequisite: Permission of instructor. An introduction to the study of bilingualism and the Chicano. The course will focus on the socio-linguistic and educational implications of bilingualism.

121 • Writing Experiences for Bilinguals (4) Rodriguez del Pino
Prerequisite: Permission of instructor. A comparative analysis between Standard Spanish and Standard English; orthography and syntax. Special attention is given to translation methodology and vocabulary building. Course touches on orthography, accents and its rules and sentence construction.

140 • The Mexican Cultural Heritage of the Chicano (4) Rodriguez del Pino
Prerequisite: Consent of instructor. A panoramic view of present day Chicano traditions analyzed from a Mexican cultural heritage perspective in order to comprehend and appreciate the uniqueness and difference of present day Chicano culture, its achievements and contribution to the overall American culture.

144 • The Chicano Community (4) Staff
Origins of the Chicano in rural Mexico; context of contract; patterns of settlement in the United States; the Chicano community, social structure and social change; acculturation and generational patterns; community leadership and change. **This course is the same as Sociology/144.**

170A • Chicano Community Organizations (4) Padilla
Prerequisite: Chicano Studies/1A and B recommended. Field study of the contemporary spectrum of organized activity and leadership within the Chicano community. The emphasis is on personal observations and written reports that will reinforce the lectures.

170B • Chicano Community Organizations (4) Padilla
Prerequisite: Upper Division standing or permission of the instructor. Research methods or statistics course in any of the social sciences recommended. A study of the theories, research methods, and evaluation techniques on the structures and functions of organized community activity and leadership within the Chicano community.

174 • Chicano Politics (4) Staff
Political life in the barrio, political behavior of the Chicano community and representation of the Chicanos by elected officials and interest groups. **This course is the same as Political Science/174.**

181 • The Chicano Novel (4) Rodriguez del Pino
Reading, analysis and critique of the contemporary Chicano novel as it pertains to the Chicano experience.

188A—B • Chicano Drama: Art and Life (4,4) Huerta
Focusing on drama as artistic expression and social document, the course analyzes the development of Chicano drama in dialectical interplay with the history and culture of the Chicano.

188C • Chicano Dramatic Literature and Playwriting (4) Huerta

Prerequisite: Chicano Studies/188A and B or consent of the instructor; knowledge of Spanish and English. This seminar will analyze contemporary expressions of bilingual (Spanish-English) Chicano dramatic literature in the form of published and unpublished plays written by Chicanos in recent years.

190 • Introduction to Chicano Poetry and Short Story (4) Rodriguez del Pino
Analysis and critique of the Chicano short story with discussions on the realities and values presented on the Chicano experience and universe by their authors.

192 • Field Research (4-12) Padilla
Prerequisite: Chicano Studies 170A and B. Open only to seniors, approved by instructor and department chairman. Internship in contemporary urban problems and decision-making processes as they affect the Chicano. Internship based on directed research through observation, participation and relevant readings. Student individually assigned, instructed and supervised in field work involving practical experience in decision-making unit of local governmental social service agencies or of community liaison agencies.

193 • Undergraduate Seminar (4) Staff
Prerequisite: Two courses in Chicano Studies, permission of instructor prior to enrollment, and Upper Division standing. Special topics in Chicano Studies. To be offered intermittently.

197 • Special Topics Seminar: Education of the Chicano Child (4) Arce, Romo
Purpose of the course is to present a survey of the relationship between the schools and the Chicano child. Also included will be information on theories, methods, and resources necessary for developing and evaluating effective teaching strategies in meeting the educational needs.

***199 • Independent Studies** (1-5) Staff
Prerequisites: Completion of a minimum of 84 units. Admission by permission. Limited to no more than five units in one quarter and no more than 12 units total.

Classics

Professors

Keith Aldrich, Ph.D., Berkeley, Greek literature, mythology.
[4]*Howard Clarke,* Ph.D., Harvard; epic, comparative literature.
[1]*David C. Young,* Ph.D., Iowa; Greek poetry.

Associate Professors

Apostolos N. Athanassakis, Ph.D., Pennsylvania; Greek poetry, classical linguistics.
Alva W. Bennett, Ph.D., Berkeley; Latin literature; poetry (Chairman).
Borimir Jordan, Ph.D., Berkeley; historiography, epigraphy, archaeology.
Joseph S. Margon, Ph.D., USC; Greek drama; Latin prose.

Assistant Professor

Jo-Ann R. Shelton, Ph.D., Berkeley; Latin literature, drama.

Concerns of the department

The field of Classics incorporates the study of the civilization of ancient Greece and Rome, and of the world and time over which the Greeks and Romans extended their influence. The heart of classical studies is the collection of literary, historical, philosophical and scientific writings from Homeric down to Byzantine times, which survived to direct the development of modern Western culture. The reconstruction and interpretation of these writings is the primary responsibility of the classical philologist, whose colleagues frequently are specialists in some particular field, such as epigraphy, the study of ancient inscriptions; or papyrology, the study of papyrus remains. Others devote their talents to research in specific cultural phenomena, such as Greek political theory, classical art or mythology. Still others turn their attention to the problems of language, grammar and linguistics. All these studies are interrelated, and all the classicists pursuing them are in a real sense working toward the same goal: a wider picture of Graeco-Roman culture as a means toward a clearer understanding of our own.

Bachelor of Arts — Classics

The Classics major program offers a challenging but rewarding course of study in the unified field of Graeco-Roman culture. It is designed to accommodate both the aspirant to graduate studies in Classics or related fields and the student primarily interested in an undergraduate liberal arts major.

Preparation for major

In addition to Greek/105 and Latin/105 (or equivalents) with a grade of C or higher, the student must pass History/4A—4B and Philosophy/20A.

Upper Division major

The major must complete a minimum of 36 units in upper division Greek and Latin courses, including Latin/110A—B—C and Greek/140A—B—C (six units). The remaining 30 units must come from courses numbered 106 or above (Greek/104 and 105 and Latin/105 do not count toward the departmental Upper Division requirements); of these 30 units, the minimum in either language is 12. Up to eight units of the following courses may be taken P/NP in the major: Greek/198, 199; Latin/198, 199.

At least one year of German or the equivalent is strongly recommended for the major who intends to pursue the field of Classics beyond the B.A. degree. It is also recommended that some of the student's electives be chosen from Classics/37—40 and from closely related courses in art, history and philosophy.

Bachelor of Arts — Greek

Preparation for major

Greek/1, 2, 3, 105, and the student must pass History/4A—B and Philosophy/20A.

Upper Division major

The major must complete a minimum of 36 units in upper division Greek courses (exclusive of Greek/105), including Greek/140A—

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[1] Absent on Leave, Fall 1975
[4] Absent on Leave, 1975-76
*See L-2 for 198/199 independent studies unit limitations.

and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter in the year in which the advanced degree will be completed.

Specific details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Correspondence information

Department of Classics, South Hall, Rm. 5607, University of California, Santa Barbara, California 93106. Phone: (805) 961-3556.

Classics

Courses in translation

Lower Division courses

20A—B • Greek and Latin in Current English (4,4) Athanassakis
Study of Greek and Latin element in English etymology. No knowledge of Greek or Latin necessary.

37 • Greek Literature in Translation (4) Staff
Reading and lecture survey of principal Greek writers, such as Homer, Pindar and Thucydides.

38 • Latin Literature in Translation (4) Staff
Reading and lecture survey of principal Roman writers, such as Catullus, Horace and Vergil.

40 • Greek Mythology (4) Staff
Study of the rationale of mythology, and the various patterns of mythography. Readings in primary literary sources.

Upper Division courses

100A—B • Greek and Roman Civilization (4) Margon, Shelton
Introduction to the various aspects of Greco-Roman civilization such as art, education, daily life, festivals, law, religion, science and sports. 100A: Greek/100B: Roman.

102 • Greek Tragedy in Translation (4) Aldrich, Bennett
Plays by Aeschylus, Sophocles and Euripides in English translation. The role of tragedy in Greek culture and literature.

105 • Ancient Athletics (3) Young
Study of specific sports and events, history of ancient Olympics and other meets, and of individual achievements; professionalism, training, facilities and place of athletics in Greek culture, literature and art.

120 • Greek and Latin Lyric Poetry (4) Aldrich, Athanassakis, Bennett
Development, forms and interpretation of ancient lyric poetry; such authors as Sappho, Pindar, Catullus and Propertius in English translation.

125 • Greek and Roman Historians in Translation (4) Jordan
Development of history as a genre; such authors as Herodotus, Thucydides, Livy and Tacitus in English translation.

130 • Comedy and Satire in Translation (4) Athanassakis, Bennett
The comic playwrights, such as Aristophanes and Plautus, and satirists, such as Lucian and Juvenal, in English translation.

135 • Seneca and Roman Tragedy (4) Shelton
Discussion of the origin and development of Roman tragedy, with specific emphasis on the tragedies of Seneca. Study of character portrayal, plot development, theatrical effect and other elements, such as psychological exploration, typical of Senecan tragedy.

180 • Classical Archaeology (4) Jordan
Prerequisite: Anthropology/3 or one Upper Division course in a related field, such as classical languages, prehistory, ancient art or history, or permission of instructor. An introduction to the methods of classical archaeology and a survey of the major monuments and sites of Greece.

*199 • **Independent Studies in Greek and Latin** (1-5) Staff
Independent study in areas in which both Greek and Latin are necessary. 199 courses are limited to no more than five units in one quarter and no more than 12 units total.

Graduate courses

201A—B • Pro-seminar (2,2) Aldrich and Young
Bibliography, methodology and history of classical scholarship.

202 • Comparative Geek and Latin Morphology and Syntax (4) Athanassakis
Introduction to classical linguistics; history of Greek and Latin in their Indo-European context (including Mycenaean Greek).

203 • Mythology and Religion (4) Aldrich
Greek myths: development, variants and literary use. Greek and Roman religions.

211—212—213 • History of Greek and Latin Literature (2,2,2) Staff
Survey of development of poetry and prose; major authors. Special reading and reports.

253 • Epigraphy and Paleography (4) Jordan

596AA—ZZ • Directed Reading and Research (2-4) Staff
Prerequisite: Written proposal, approved by department chairman and filed with Graduate Division. Individual Tutorial.

597 • Preparation for Comprehensive Exams (1-6)
Prerequisites: Permission of graduate adviser and chairman. Study for Master's comprehensive examinations and Ph.D. examinations. No unit credit allowed toward degree.

598AA—ZZ • Master's Thesis Research and Preparation (1-4) Staff
Prerequisites: Permission of instructor and graduate adviser. Independent Research. No unit credit toward degree.

Greek

Lower Division courses

1 • Elementary Greek (4) Staff

2 • Elementary Greek (continuation of **Greek/1**) (4) Staff
Prerequisite: Greek/1 or equivalent.

3 • Intermediate Greek (4) Staff
Prerequisite: Greek/2 or equivalent. Review of syntax and reading of Attic prose writers.

4 • Accidence and Syntax (1) Staff
Prerequisite: Greek/3 or equivalent. Systematic study of declensions and conjugations; peculiarities of syntax. No reading. May be taken concurrently with courses for which it is prerequisite; an A or B grade in Greek/3 will be considered the equivalent of Greek/4 where the latter is a prerequisite.

Upper Division courses

Greek/105 or Greek/106 is equivalent to quarter course 5 for fulfillment of the General Education requirement in Foreign Language.

105 • Introduction to Prose: Attic Orators (4) Staff
Prerequisite: Greek/4 or equivalent. Advanced reading and syntactical analysis. Background of Greek Prose development.

106 • Introduction to Poetry: Homer (4) Staff
Prerequisite: Greek/4 or equivalent. Reading in the *Iliad.* Homeric grammar and metrics. Greek/104 (or 105) and 106 or their equivalent are prerequisite to all higher language courses in Greek.

139 • New Testament Greek (4) Pearson
Prerequisites: Greek/104 (or 105) and 106 or permission of instructor. Reading in the Greek New Testament, with comparative study of related materials from Greek literature of the Hellenistic-Roman period (same as Religious Studies/139).

140A—B—C • Greek Prose Composition (1,1,1)) Staff
Advanced grammar, sight reading and extended prose composition. It is recommended that this series of courses be taken together with Greek/161—2—3.

141 • Pre-Socratic Philosophers (4) Aldrich, Athanassakis
Philological study in materials ranging from Thales through Democritus.

142 • Plato (4) Jordan
Reading and study of a complete Socratic dialogue.

143 • Post-Platonic Philosophers (4) Jordan
Philological study in materials ranging from Aristotle through Plotinus.

*151 • **Euripides** (4) Jordan
Introduction to the tragic genre. Reading and study of a complete play.

*152 • **Sophocles** (4) Margon
A complete tragedy, plus readings in Sophoclean literature.

*153 • **Aeschylus** (4) Aldrich, Staff
Study of a complete tragedy. Problems of textual criticism.

161 • Hesiod, Theognis, and Solon (4) Aldrich, Athanassakis
An introduction to archaic religion, mythology, ethics and historiography.

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*See L-2 for 198/199 independent studies unit limitations.

B—C. Up to eight units of the following courses may be taken P/NP in the major: Greek/199. (See last paragraph of Bachelor of Arts — Classics for recommended courses.)

Bachelor of Arts — Latin

Preparation for major

Latin/1, 2, 3, 105, and the student must pass History/4A—B and Philosophy/20A.

Upper Division major

The major must complete a minimum of 36 units in upper division Latin courses (exclusive of Latin/105), including Latin/110A—B—C. Up to eight units of the following courses may be taken P/NP in the major; Latin/199. (See last paragraph of Bachelor of Arts — Classics for recommended courses.)

Bachelor of Arts — Classical Archaeology

This program will provide the student with a broad and intensive knowledge of the topography, monuments, art and architecture of the ancient world, as well as ancient history and civilization. The student will also be able to acquire a grasp of archaeological methods, and a basic knowledge of Greek and Latin. The student will have the choice in this major of placing an emphasis on Greek or Roman art and archaeology.

Preparation for the major

Classics/37, 38, 40, Anthropology/3, History/4A, and Art/6A, and Greek or Latin/1,2,3, 105 and 106.

Upper Division major

The major must complete 44 Upper Division units from the courses listed below, distributed among the specified groups as indicated.

Anthropology/103, Classics/125, Anthropology/126, Anthropology/183.

Greek Emphasis: Classics/100A, History/111A—B, 112, and choice of two out of four: Art/152D, 152E, 152F, and Classics/180A.

Roman Emphasis: Classics/100B, History/113A—B, 113Q, and choice of two out of three: Art/152G, 152H and Classics/180B.

The eleventh required Upper Division course for the major may be taken from any Greek or Latin course 111 or higher or from any of the following courses: Art/152A, 152B, 153A and 153B.

Bachelor of Arts — Classical Civilization

The major in Classical Civlilization is designed for those students who wish to pursue a basic liberal arts degree and prefer a general, interdisciplinary program to specialization in the Classical languages and their literature.

Preparation for major

Classics/37, 38, 40, and Philosophy/20A, and Greek or Latin/1, 2, 3 and 105 or 106.

Upper Division major

The major must complete 40 Upper Division units from the courses listed below, distributed among the specified groups as indicated.

Classics/100A—B (eight units)

At least two courses from the following (Group I): Classics/102, 120, 125, 130, 135 (eight units).

At least five courses from Groups II—IV, a minimum of one course in each group. Group II: History/111A—B, 112, 113A—B, Political Science/187; Classics/105; Group III: Philosophy/151, 152, 153, 156, 195, Religious Studies/132, 134A—B, 135; Group IV: Art/152D—E—F—G—H, Classics/180 (20 units)

The tenth required course may come from any of the above groups or from level 105 or 106 of Greek or Latin, provided this course is not used simultaneously in preparation for the major. Up to eight units of the following courses may be taken P/NP in the major: Greek 199, Latin 199.

Master of Arts

In addition to the general requirements for admission to graduate status, the applicant should have an undergraduate major or the equivalent in Greek, Latin or Classics. Other students may be admitted if they demonstrate proficiency in the languages, but they will be required to make up any deficiencies in their undergraduate training, in addition to the regular course work for the M.A. degree.

The department offers the M.A. degree under Plan I (30 units and thesis) and Plan II (36 units without thesis). In either plan, more than half of the units must be in graduate courses within the department. The remaining units may come from upper division courses in the department or from approved courses in other departments such as art, history, and philosophy, if they are relevant to the student's program.

The following course is required: pro-seminar in bibliograph and methodology. (Classics/201A).

The candidate must meet the following requirements before taking the M.A. comprehensive examination: a) reading knowledge of German, French or Italian (by examination) b) sight translation (by examination) c) composition (by course credit or examination d) ancient history (by course credit or examination).

Successful performance in the M.A. comprehensive examination on Greek and Latin literature.

Career opportunities

The several majors offered by the Classics Department, as well as offering a liberal arts undergraduate education, are oriented toward teaching jobs at the secondary, college and university level. The spectrum of courses offered to our majors would enable the student to teach Classical Civilization, Ancient History, Greek and Latin Literature in translation, Greek and Roman Art, Archaeology, Greek Philosophy as well as the Greek and Latin languages.

Teaching credentials

Students who complete a major in Classics or the majors in Greek or Latin may be eligible to pursue a California teaching credential. A Classical Civilization major can be used to obtain a teaching credential in three areas: Classical Studies, Humanities, and Ethnic Studies.

Students interested in a community college instructors credential

162 • Herodotus (4) Jordan
Reading and study of the History of Herodotus.

163 • Thucydides (4) Athanassakis, Jordan
Reading and research in the historical, literary and philological aspects of Thucydides.

164 • Aristophanes (4) Athanassakis
Reading of a complete play; history of Greek comedy.

***171 • Lyric Poets and Homeric Hymns** (4) Young
Exclusive of the choral poets and the primarily ethical elegists. The fragments of Alcaeus, Anacreon, Archilochus, Sappho, Tyrtaeus and others; selected Homeric hymns.

***172 • Pindar** (4) Aldrich, Young
Reading, interpretation, metrical study and textual criticism. Introduction to other choral poets.

***173 • Hellenistic Poets** (4) Bennett
Introduction to the poetry of the Alexandrian period, such as that by Apollonius Rhodius, Callimachus and Theocritis.

***199 • Independent Studies In Greek** (1-5) Staff
199 courses are limited to no more than five units in one quarter and no more than 15 units total.

*Not to be given 1975-76.

Graduate courses

241A—Z • Seminar in Greek Literature (4) Staff
Prerequisite: Classics/201 or permission of instructor. Intensive study and research in a Greek author or genre. Author varies. Course number may be repeated, but not letter.

596AA—ZZ • Directed Reading and Research (2-4) Staff
Prerequisite: Written proposal, approved by department chairman and filed with Graduate Division. Individual tutorial.

598AA—ZZ • Master's Thesis Research and Preparation (1-4) Staff
Prerequisites: Permission of instructor and graduate adviser. Independent Research. No unit credit toward degree.

Latin

Lower Division courses

1 • Elementary Latin (4) Staff

2 • Elementary Latin (continuation of 1) (4) Staff
Prerequisite: Latin/1 or equivalent.

3 • Intermediate Latin (4) Staff
Prerequisite: Latin/2 or equivalent. Review of forms and syntax and reading of Roman prose writers.

4 • Accidence and syntax (1) Staff
Prerequisite: Latin/3 or equivalent. Systematic study of declensions and conjugations; peculiarities of syntax. No reading. May be taken concurrently with courses for which it is prerequisite; an A or B grade in Latin/3 will be considered the equivalent of Latin/4 where the latter is a prerequisite.

11 • Intensive Elementary Latin (4) Staff
Primarily for graduate students. Latin/1 covers the same ground as Latin/1—2, but at a far more rigorous pace.

Upper Division courses

103 • Medieval Latin Readings. (4) Staff
Prerequisite: Latin/1, 2 and 3 (or their eqivalents or permission of instructor). Graded and selected reading of Medieval Latin prose and verse writers.
Latin/105 or Latin/106 is equivalent to quarter course 5 for fulfillment of the General Education requirement in Foreign Language.

105 • Introduction to prose: Cicero and Caesar (4) Staff
Prerequisite: Latin/4 or equivalent. Advanced reading and syntactical analysis. Background of Latin prose development. Latin/105 is equivalent to language 5 in the Foreign Language requirement.

106 • Introduction to Poetry: Ovid (4) Staff
Prerequisite: Latin/4 or equivalent. Grammar and metrics of Latin poetry. Latin/106 is equivalent to language 5 in the Foreign Language requirement. Latin/105 and 106 or their equivalent are prerequisite to all higher language courses in Latin.

***110A—B—C • Latin Prose Composition** (1,1,1) Aldrich, Bennett
Advanced grammar, sight reading and extended prose composition.

111 • Roman Epic (4) Bennett
Backgrounds. Vergil. Introduction to later epic poets, such as Lucan and Statius.

112 • Roman Elegy (4) Bennett
Reading and study of Propertius and other elegists.

113 • Roman Satire (4) Bennett
Horace, Juvenal, Persius, and their antecedents.

115 • Roman Comedy (4) Athanassakis
Plautus and Terence. Reading of complete plays and study of the origins of Roman Comedy.

116 • Cicero: Essays and Letters (4) Margon
The private Cicero. Philosophical and oratorical works and correspondence.

117 • Prose of the Empire (4) Margon
Study and reading selected from such authors as Seneca, Petronius, Quintilian and Pliny.

***121 • Sallust** (4) Bennett, Jordan
Reading and philological study.

***122 • Livy** (4) Jordan
Study of the structure and Latinity of Livy. Extensive reading.

***123 • Tacitus** (4) Jordan
Reading in the major works. Study of Tacitean style and models.

***131 • Poets of the Roman Republic** (4) Bennett
Principally Ennius, Lucretius and Catullus.

***132 • Augustan Poets** (4) Staff
Horace: Odes and Epodes. Vergil's Eclogues and Georgics.

***133 • Post-Augustan Poets** (4)Staff
Readings in lyric poetry from the early empire to and including the late classical period.

***199 • Independent Studies In Latin** (1-5) Staff
199 courses are limited to no more than five units in one quarter and no more than 15 units total.

*Not to be given 1975-76.

Graduate courses

221A—Z • Seminar in Latin Literature (4) Staff
Prerequisite: Classics/201 or permission of instructor. Intensive study and research in a Latin author or genre. Author varies. Course number may be repeated, but not letter.

596AA—ZZ • Directed Reading and Research (2-4) Staff
Prerequisite: Written proposal, approved by department chairman and filed with Graduate Division. Individual Tutorial.

598AA—598ZZ • Master's Thesis Research and Preparation (1-4) Staff
Prerequisites: Permission of instructor and graduate adviser. Independent Research. No unit credit toward degree.

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*See L-2 for 198/199 independent studies unit limitations.

Comparative Literature

Professors

Stuart Atkins, Ph.D., Yale; Germanic & Slavic languages, 18th century literature.
Howard Clarke, Ph.D., Harvard; Homer, classical tradition.
Genevieve Delattre, Ph.D., Columbia; French literature of the 19th century (Romanticism - Balzac).
Richard Exner, Ph.D., USC; Germanic & Slavic languages, German literature of the 19th and 20th century.
William Frost, Ph.D., Yale; English literature & the classics.
Edmond E. Masson, Ph.D., Berkeley; *(Emeritus).*
Jorge de Sena, Ph.D., Sao Paulo; Portuguese and Brazilian literature, comparative literature (Chairman).
Mark Temmer, Ph.D., Yale; French, Jean-Jacques Rousseau.

Associate Professors

Joseph Margon, Ph.D., USC; Classics, Greek literature and Latin literature.
Patrizio Rossi, Ph.D., Berkeley; Italian, contemporary Italian literature and baroque literature.

Assistant Professors

Anne Kernan, Ph.D., Cornell; English, Old and Middle English.
Harvey L. Sharrer, Ph.D., UCLA; Spanish and Portuguese, Arthurian literature.
Roberto de Souza, P.L., Universidad de La Plata; Spanish, Spanish linguistics and philology.

Concerns of the program

The interdepartmental program in Comparative Literature initiated in 1969-70 offers an undergraduate major along with studies leading to the Master of Arts and the Doctor of Philosophy. The program is presently under the direction of the Dean of the College of Letters and Science and is administered by a chairman and Advisory Committee representing the Departments of Classics, English, French and Italian, Germanic and Slavic Language and Literatures, and Spanish and Portuguese.

Comparative Literature is the study of literature without specific regard for national or linguistic boundaries. It is comparative in that it deals with inter-relationships between different literatures, through time and space. It is the comparatist's concern to deal also with the masterworks of world literature, with trends and cultural influences (e.g. the classical tradition), with periods (e.g. Medieval Literature, Mannerism and Baroque), with movements (e.g. Romanticism, Symbolism, Avant-Garde), with themes (e.g. the Faust legend), with genres (e.g. the novel), with the history and theory of literary critcism.

The student, whether preparing for the major as an undergraduate, or for the M.A. or the Ph.D., will be under the direction of one of the members of the Advisory Committee (who will report concerning the student to the chairman at the end of each quarter) and of the chairman.

Bachelor of Arts

Preparation for the major

Students intending to concentrate in Comparative Literature must first complete the normal preparation requirements for the major in the literature of their primary emphasis. Students selecting English as the literature of primary emphasis may not elect the foreign literature option in preparation for the major but instead must complete through the sixth quarter of a foreign language.

Upper Division major

The major in Comparative Literature is available under two plans, and in either case it is the responsibility of the student and of the Comparative Literature Advisory Committee to insure by appropriate electives that overall studies are comparative in nature and coherent enough, while reflecting the areas of maximum interest manifested by the student and approved by the Comparative Literature Advisory Committee.

Plan A: This plan requires 40 units of upper division courses in one national literature (which may be English) in its original language, and in Comparative Literature Studies. Twenty-four (24) of these units must be in that national literature; if the national literature is English, four of these units must be taken in the foreign language required under **Preparation for the major, and** will normally be at the upper division level. Sixteen (16) must be in Comparative Literature courses, one of which has to be Comparative Literature 100 (Introduction to Comparative Literature). Majors are strongly advised to develop a reading knowledge in another classical or foreign language besides the one they may have chosen.

Plan B: This plan requires 40 units of upper division course work in two national literatures, one of which may be English, in their original languages. Twenty (20) of these units must be in the student's primary literature, sixteen (16) in the secondary literature. Majors *must* also take Comparative Literature/100, four units, (Introduction to Comparative Literature), normally in their senior year. Comparative Literature courses may be substituted up to the amount of eight (8) units for the required upper division courses, when relevant to the specific student's program.

Master of Arts Degree

In addition to fulfilling the general requirements for admission to graduate status, the applicant should have an undergraduate major in Comparative Literature (Plan A or B), or its equivalent, i.e., a major and a strong minor in two literatures, one of which may be English, with some course work in Greek or Latin or classics in translation.

Recommendations regarding admission will be made by the Comparative Literature Advisory Committee within the general guidelines set by the Graduate Division. Upon admission, an M.A. student will have as an advisory committee the Program Chairman and two members of the CL Advisory Committee appointed to represent the fields of interest. In special cases, some other member of the Faculty may be asked to serve as a co-adviser.

The M.A. degree in Comparative Literature is offered under Plan I (thesis) and Plan II (without thesis).

Plan I: This plan is correlated to the Major under Plan A. The student is expected to take 30 units of course work, plus six units of thesis work. Of the 30 units of course work, more than half must be in graduate courses approved by the Program as being most comparatist in their approach. Comparative Literature 200 (Seminar in Comparative Literature) is required. In addition to the two primary languages, the candidate must demonstrate a reading knowledge of at least one additional language approved by the advisory committee. English may count as the first or second. The thesis will be approved by the student's adviser (or advisers) and the chairman, and must be comparatist in nature and methodology.

Plan II: This plan is correlated to the major under Plan B. Thus, Plan II requires the study of two literatures, one of which may be English, in their original languages. The student is expected to take 36 units of course work. CL 200 (Seminar in Comparative Literature) is required. Approximately two-thirds of the units should be in his primary literature, one third in the secondary, and more than half of all units must be in graduate courses. The courses taken by the student must meet with the approval of the advisory committee to insure that they will be as correlated as possible. The candidate must demonstrate a reading knowledge of at least one additional (classical or foreign) language approved by the advisory committee.

The candidate must pass a comprehensive written examination on the major and minor literatures. This examination will be set by the advisory committee.

Doctor of Philosophy degree

In addition to fulfilling the general requirements for admission to graduate status, the student must meet the requirements of the Comparative Literature Program. A student entering with an M.A. from another university must demonstrate to the Committee, normally by examination, satisfactory literary background and lingusitic resources for doctoral work in Comparative Literature. Any course deficiencies should be made up during the first quarter of residence.

Recommendations regarding admission will be made by the Comparative Literature Advisory Committee within the general guidelines set by the Graduate Division. Upon admission, the student will have as a committee the Program Director and those members of the Comparative Literature Advisory Committee who represent the major and minor languages.

The Ph.D. degree in Comparative Literature requires the study of three literatures in their original languages, one major and two minors. One of these literatures may be English. The major will ordinarily entail the mastery of one literature in its full historical development. The minors may, with the approval of the student's advisers, be limited to the most important works of one literature, or to the influence of the minor literature on the major (e.g., Greek on German), or to one period (e.g., English Renaissance), topic (e.g., ancient literary criticism), or genre (e.g., the Russian novel). Consequently, the student who in the first year follows the course of study leading to the M.A. degree under Plan II should expect to extend course work to include a second minor in literature.

The student must also demonstrate a reading knowledge of one of the following languages: French, German, Latin, Greek, or, with the consent of the adviser, whatever other language is relevant to, but not part of, the program. The form and content of this examination will be determined by the candidate's advisory committee.

Upon completion of all course work, the student will take three written examinations on the major and minor literatures. The written examinations will be followed by an oral examination administered by a doctoral committee appointed by the Comparative Literature Advisory Committee.

Upon passing the qualifying examination, the student will be advanced to candidacy. The student will then consult with a member of the graduate faculty concerning a dissertation topic. After the topic and research plan have been approved by the doctoral committee, a dissertation director will be appointed by the Director of the Program, and the student will write a dissertation. Upon its completion and acceptance the student will be questioned on it in an oral examination.

Teaching credentials

Students who complete a major in Comparative Literature may be eligible for pursuing a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses with the major. The major in Comparative Literature must include specific courses required by the departments of their primary and secondary literatures. Consult with designated advisers in the Comparative Literature Program concerning these requirements.

Successful completion of an advanced degree in Comparative Literature qualifies for application for a Community College Instructors Credential. Students interested in the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter in the year in which the advanced degree will be completed.

Correspondence information

Comparative Literature Program. Phelps Hall 4217, University of California, Santa Barbara, California 93106. Phone: (805) 961-3161.

Comparative literature

Lower Division courses

50FS • Freshman Seminar in Comparative Literature (3) Sena
The aim of this seminar is to make the student familiar with different literatures through time and space, and how they can be related to each other. Thus, the methods of Comparative Literature are supposed to appear as the basic approach to any humanistic culture and education.

Upper Division courses

100 • Introduction to Comparative Literature (4) Clarke, Sena
Prerequisite: Reading knowledge of one foreign language. Method and practice of comparative study. May be repeated for credit with permission of instructor and Program Chairman and assignment of special material.

103 • Masterpieces of World Literature. (4) Clarke, Sena
Prerequisite: Reading knowledge of relevant foreign language. Comparative study of world literary masterpieces, correlated by theme, trend, genre, etc.

105 • The Classical Tradition (4) Staff
Prerequisite: Reading knowledge of relevant foreign language. Studies in the post-classical of Graeco-Roman literature and mythology. Neo-classicism; Classical influences on western literature; Myth and literature.

110A—B • Mannerism and Baroque (4,4) Sena
Prerequisite: Reading knowledge of relevant foreign language. A comparative approach to literature and its historical and philosophical background in the sixteenth and seventeenth centuries, with some attention to philosophy, music and the visual arts. Selected readings from French, Spanish, Portuguese, Italian, German and English writers of the period.

Either quarter may be elected separately.

112A—B • The Enlightenment (4-4) Staff

Prerequisite: Reading knowledge of French or German. Comparative study of literary trends and correlated philosophical ideas of the 18th century in Western literature.

115 • The Bildungsroman (4) Staff
Prerequisite: Reading knowledge of French or German. A comparative study of the "novel of education" in French, German and English literature. Readings from Rousseau, Stendhal, Flaubert, Goethe, Keller, James and Joyce.

117A—B • Romanticism (4,4) Staff
Prerequisite: Reading knowledge of French or German. Comparative study of the origins and international development of the Romantic movement.

120 • Medieval Literature (4) Staff
Prerequisite: Reading knowledge of relevant foreign language. The course may be repeated for credit, if the content changes with the instructor. Studies in the popular, courtly, religious and heroic traditions of western European literature and drama from the end of classical antiquity to the beginning of the Renaissance. The origin, development and transmission of characteristic themes.

125 • Myth, Comparative Studies (4) Maddox
Prerequisite: Reading knowledge of relevant foreign languages. A comparative study of world mythology with special emphasis on theories of myth (Muller, Fraser, Levi-Strauss, etc.) and its relevance to the study of literature.

130 • Avant-garde Movements (4) Sena
Prerequisite: Reading knowledge of relevant foreign languages. Comparative study of the Avant-garde movements in western literature in the first three decades of the 20th century.

131 • Surrealism (4) Staff
Prerequisite: Reading knowledge of French or relevant foreign languages. Study of surrealism and its impact on other movements and the arts, surveyed from a comparative point of view.

***199 • Independent Studies** (1-5) Staff

Graduate courses

200 • Seminar in Comparative Literature (4) Clarke, Sena
Bibliography and problems of comparative literary study.

205A—B—C • History of Literary Criticism (4,4,4) Clarke, Sena
Prerequisites: Knowledge of relevant foreign languages (equivalent to level of course 3). Criticism from Antiquity to the present, on a comparative and international basis, providing information on ideas and methods of analysis and a general understanding of what criticism has aimed at.

594 • Special Topics (1-4) Staff
A special seminar on research subjects of current interest. Variable unit course. S/U or letter grade.

596 • Directed Reading and Research (2-18) Staff
Individual tutorial. A written proposal for each tutorial must be approved by the Program Chairman and filed with the Graduate Division. Minimum two units per quarter. No more than half of units required for M.A. maybe taken in 596 series. Letter grade only.

597 • Individual Study for M.A. Comprehensive and Ph.D. Exams (1-12) Staff
For individual study by student with major professor or chairman or director of his individual program.

598 • Masters Thesis Research and Preparation (2-12) Staff
Research underlying the thesis and writing of the thesis. S/U grade.

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*See L-2 for 198/199 independent studies unit limitations.

Computer Science

Faculty Committee

John E. Doner, Ph.D., Associate Professor of Mathematics*.
William E. Palke, Ph.D., Assistant Professor of Chemistry*.
Leon Presser, Ph.D., Assistant Professor of Electrical Engineering*.
Stephen Simons, Ph.D., Professor of Mathematics*(Chairman).
John Sonquist, Ph.D., Professor of Sociology*.
David A. Sprecher, Ph. D., Professor of Mathematics*.
Michael P. Ward, M.A., Acting Assistant Professor of Economics*.
Roger C. Wood, Ph.D., Professor of Electrical Engineering*

Concerns of the program

The College of Letters and Science in cooperation with the College of Engineering offers an interdepartmental major leading to the degree of Bachelor of Arts in Computer Science.

The program is designed for students with interests in

- Operating and Programming Systems
- Applications of Computer Technology
- Large-scale Information Systems
- Theory of Computing

Students have ready access to a large IBM 360/75 computer, a sophisticated time-shared computer graphics system and network access to computer facilities around the country. Smaller computers are also available on campus.

Bachelor of Arts

Preparation for the major

The following courses are required:
Mathematics/3A—B—C or 11A—B
Mathematics/4B or 5A or 119A
Mathematics/9 or 108A
Mathematics/6A—B or Engineering/3A—B
Mathematics/8 and 136
EE/CS 105A—B

Upper Division major

The required courses for the major are these:
EE/CS 154, 165A—B
Mathematics/104A, 120A, 150
Sociology/111
Four of the following six courses: EE/CS 152A, 165C, 173, Mathematics/151, one of Mathematics/104B—C, Sociology/113.

Electives

The following are suggested as electives in related fields. The student should check these and other course descriptions carefully despite the fact that they are offered in a department whose subject matter may be unfamiliar.

Mathematics/104B—C, 108AA—B, 109, 116, 119B—C, 125A—B—C, 131, 132A—B—C, 120B—C, 135A—B—C, 137, 138, 151.
Linguistics/110A—B, 115.
Economics/102A—B—C, 104A—B, 105, 140, 141A—B—C, 143.
EE/CS 107A—B—C, 150, 151, 152A—B, 158A—B—C, 165C, 173.
Chemical Engineering/158A—B—C

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*See Departments for faculty information.

Mechanical Engineering/157A—B, 180, 226.
Political Science/106, 107, 180, 180L, 181, 190A—B—C—M—N.
Physics/127B—C.
Sociology/103, 106, 109B—C, 110, 112A—B, 167, 123, 136, 166.
Psychology/120, 121, 150, 151.
EE/Soc/113, 115.
EE/Math/Soc/192.

Individual or group study arrangements can also be made with other departments, as well as with those listed here.

Bachelor of Science

At the time of going to press, a Bachelor of Science degree program in Computer Science has received final approval, effective Fall 1975. More information about this can be obtained from the Mathematics Department Office.

Each student will be assigned an adviser chosen from the appropriate department, according to the student's emphasis and interest in computer science. The student will need to consult the adviser about the program and training best suited for individual goals.

Related majors

The Department of Electrical Engineering and Computer Science and the Mathematics Department have computer related majors available. The interested student should consult the catalog listing of these departments. A graduate program in computer science is also offered by the Department of Electrical Engineering and Computer Science.

Career opportunities

Computer science offers a variety of challenging and rewarding careers. Some important areas are:

Scientific applications — The design and preparation of programs in support of scientific and engineering applications.

Management information systems — Large organizations of all types (business, government, academic, etc.) make extensive and sophisticated use of computer systems in data processing, operations analysis, management information, record keeping, customer services, and even internal communications.

Systems programming — Design, evaluation, and maintenance of computer operating systems, compilers and related software.

Continuing improvement in computer hardware and programming technique is now opening up many new areas of application and research: real time signal processing, hospital services, computer control of manufacturing processes, computer aided instruction, etc.

Correspondence information

Information concerning advisers and other aspects of the major may be obtained from the **Department of Mathematics, South Hall 6607, University of California, Santa Barbara, California 93106. Phone: (805) 961-2171.**

Computer science

Upper Division courses

The following are the descriptions of all courses required for the upper division major.

EE/CS 152A • Switching Theory (4)
Prerequisites: EE/CS 105A or consent of instructor. Boolean algebra, switching functions. Application of Boolean algebra to the design and analysis of combinatorial logic nets; minimization procedures. Analysis and synthesis of sequential switching circuits; synchronous and asynchronous operation; state minimization; hazards and races. This course is offered in the Winter Quarter.

EE/CS 154 • Introduction to Computer Architecture (3)
Prerequisite: EE/CS 105A. Introduction to the architecture of computer systems. Topics include channels, controllers, memory hierarchy, interrupt systems, software versus hardware tradeoffs, I/O devices, overview of components of operating systems, discussion of architecture of existing systems. This course is offered in the Winter Quarter.

EE/CS 165A • Information Structures (3)
Prerequisite: EE/CE 105A or consent of instructor. Study of fundamental structures employed to represent information in main computer storage. Advantages and disadvantages of using alternative information structures in the solution of problems. Methods of storage management. Information structures in programming languages. This course is offered in the Fall Quarter.

EE/CS 165B • Formal and Programming Languages (4)
Prerequisite: EE/CS 165A or consent of instructor. Basic concepts in the theory of formal languages and automata. Analysis and evaluation of programming languages from a data and control structure point of view. Interactive languages. Consideration of various programming languages. This course is offered in the Winter Quarter.

EE/CS 165C • Translation of Programming Languages (4)
Prerequisite: EE/CS 165B or consent of instructor Structure of translators. Assemblers, interpreters and compilers. Basic translation techniques. Translators for batch and on-line environments. Translation of precedence and LR(k) languages. Rudiments of translator writing systems. This course is offered in the Spring Quarter.

EE/CS 173 • Architecture of Operating Systems (3)
Prerequisite: EE/CS 165A or consent of instructor. Study of the structure, design and evaluation of operating systems. Integratedconsideration of architectural software/hardware tradeoffs. This course is offered in the Spring Quarter.

Mathematics/104A • Numerical Methods by Approximation (4)
Prerequisites: Mathematics/3C or 11B and either Mathematics/6A or Engineering/3A—B or EE/CS 5. Root finding by iterative methods. Solving systems of linear equations. Polynomial interpolation. Students will use the computer. This course is offered in the Fall Quarter.

Mathematics/104B • Numerical Methods in Differential Equations (4)
Prerequisites: Mathematics/104A and either Mathematics/4B—5A or 119A. Approximation by polynomials. Numerical integration. Numerical solutions of Differential Equations. Students will use the computer. This course is offered in the Winter Quarter.

Mathematics/104C • Numerical Methods in Algebraic Problems (4)
Prerequisites: Mathematics/104A, and either Mathematics/9 or 108A. Error analysis. Matrix norms. Iterative methods for solving systems of linear equations. Eigenvalues and eigenvectors. Students will use the computer. This course is offered in the Spring Quarter.

Mathematics/120A • Probability and Statistics (4)
Prerequisite: Mathematics/4B. Basic concepts of probability, limit theorems, discrete and continuous random variables, derived distributions, some statistical applications. Point estimation, random sampling, tests of hypotheses, confidence intervals. (This is a description of Mathematics/120A—B—C.) This course is offered in the Fall Quarter.

Mathematics/150 • Automata and Formal Languages (4)
Prerequisite: Mathematics/136 or consent of instructor. Automata and formal languages. Notions of finite state machines. Representations of automata, regular sets, analysis and synthesis theorems. State minimization algorithm. Context free languages. Push-down automata. Classes of formal grammars, corresponding recognition devices. Closure properties, of language classes. Deterministic languages. This course is offered in the Winter Quarter.

Mathematics/151 • Models of Computation (4)
Prerequisite: Mathematics/150 or consent of instructor. Study of models of computation and alorithmic processes, including Turing machines, recursive functions and phrase-structure grammars. Example of an unsolvable problem. Results on time and space complexity for the recognition of laguages. This course is offered in the Spring Quarter.

Sociology/111 • Computers and Society (4)
Prerequisite: None for students majoring in Computer Science. The course is an introduction to computers, their applications, and their impact on man and social institutions. The main objective of this course is to provide the student with factual and technical information to give him the ability to make reasoned judgments about computer use, to show him the social problems computers are creating along with possible remedies, and to urge him to think constructively and creatively about technology, its uses, its social impacts.

Sociology/113 • Systems Analysis and Information System Design (4)
Prerequisite: EE/CS 165A or consent of instructor. Introduction to principles and techniques involved in the analysis of information processing requirements of large-scale organizations and the development of computer-based information systems. Includes overview of implementation, control and evaluation phases.

Creative Studies

Professors

Peter Racine Fricker, F.R.C.O., Royal College of Organists in London; music.
Marvin Mudrick, Ph.D., Berkeley; literature (Provost, College of Creative Studies).
William Murdoch, Ph.D., Oxford; biology.
[2] [3]*Ian K. Ross*, Ph.D., McGill; biology.
[3]*Alan Stephens*, Ph.D., Missouri; literature.
Beatrice Sweeney, Ph.D., Radcliffe; biology.
Max L. Weiss, Ph.D., Washington; mathematics (Associate Provost, College of Creative Studies).
Adrian Wenner, Ph.D., Michigan; biology.

Associate Professors

Larry Gerstein, Ph.D., Notre Dame; mathematics.
David Harris, Ph.D., Berkeley, chemistry.
[1]*Logan Speirs*, M.A., Cambridge; literature.

Assistant Professor

David Cannell, Ph.D., MIT; physics.

Lecturers

Richard Derby, BA., UCSB; music.
Charles Garabedian, M.A., UCLA, art.
Gerard Haggerty, M.F.A., UCSB; art.
Patia Isaku, Ph.D., Wesleyan, music.
John Lilly, B.F.A., Carnegie Institute of Technology; art.
Thea Musgrave, Mus. Bac., Edinburgh, music.
Richard Phipps, M.F.A., UCSB; art.
Hank Pitcher, B.A., UCSB; art.
Max Schott, M.A., UCSB; literature.
David Trowbridge, M.A., Fresno State; art.
Paula Yurkanis, Ph.D., Virginia; chemistry.

Correspondence information

College of Creative Studies, University of California, Santa Barbara, California 93106. Phone: (805) 961-2364.

Creative Studies courses

Enrollment in any course in the College of Creative Studies requires the consent of the instructor.

General Studies

CS 10 • Group Interdisciplinary Studies (1-6) Staff
Group studies in an interdisciplinary area, supervised by a member of the faculty of the College of Creative Studies.

Art

CS 1 • Drawing and Painting (1-6) Staff

CS 2 • Themes (1-6) Staff
Drawing and painting in sequences, and according to themes.

CS 3 • Murals (1-6) Staff

CS 4 • Prints (1-6) Staff
Classical graphic media (e.g., etching and lithography) and modern technological media (e.g., photo-engraving and offset-lithography).

CS 10 • Graphic Study of the History of Graphic Ideas: Drawing (1-6) Staff
The surviving works of art from the Paleolithic period until now constitute an existing order that may be considered the proper material for study by aspiring draughtsmen and painters. Art/CS 10 emphasizes drawing.

CS 11 • Graphic Study of the History of Graphic Ideas: Painting (1-6) Staff
The surviving works of art from the Paleolithic period until now constitute an existing order that may be considered the proper material for study by aspiring draughtsmen and painters. Art/CS 11 emphasizes painting.

CS 15 • Student-Conducted Seminar (1-6) Staff
The student having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Art/CS 1, and their work will be graded by the adviser in consultation with the student instructor.

CS 20 • Sculpture (1-6) Staff

CS 21 • Bronze Casting (1-6) Staff
Studies in bronze casting, with special emphasis on the lost-wax process.

CS 50 • Elements of Film-making (1-6) Staff
Introduction to theory and technique of filmmaking.

Biology

CS 1 • Models and Experiments (1-6) Staff
Interplay between models and experimentation in the development of an understanding of the principles of biology.

CS 2 • Laboratory Project (1-6) Staff
Set up by the student in consultation with the Instructor, and concluding with the student's report of progress.

CS 3 • Reading Project (1-6) Staff
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 10 • Student-Conducted Seminar (1-6) Staff
The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Biology/CS 1, and their work will be graded by the adviser in consultation with the student instructor.

Chemistry

CS 1 • Major Unsolved Problems (1-6) Staff
Study of some of the major unsolved problems in chemistry, with the aim of developing general experimental and theoretical approaches to these problems.

CS 2 • Project (1-6) Staff
Investigation of a specific problem in chemistry. Set up in consultation with the instructor, and concluding with the student's report of progress.

CS 3 • Seminar (1-6) Staff
Presentation and critical discussion of reports on original projects.

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[1] Absent on Leave Fall 1975.
[2] Absent on Leave Winter 1976.
[3] Absent on Leave Spring 1976.

CS 4 • General Chemistry Seminar (1-6) Staff
Accelerated course in general chemistry.

CS 5 • Physical Chemistry Seminar (1-6) Staff
Accelerated course in elementary physical chemistry.

CS 6 • Organic Chemistry (1-6) Staff
Accelerated course in elementary organic chemistry.

CS 10 • Student-Conducted Seminar (1-6) Staff
The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Chemistry/CS 1, and their work will be graded by the adviser in consultation with the student instructor.

CS 14 • Inorganic Laboratory Techniques (1-6) Staff
Advanced course in inorganic chemistry emphasizing laboratory techniques.

CS 15 • Theoretical Chemistry Seminar (1-6) Staff
Course in theoretical physical chemistry emphasizing quantum mechanics.

CS 16 • Organic Laboratory Techniques (1-6) Staff
Accelerated course in organic laboratory techniques.

Literature

CS 1 • Writing: Verse (1-6) Staff

CS 2 • Writing: Narrative Prose (1-6) Staff

CS 3 • Writing: Expository Prose (1-6) Staff

CS 10 • Genres (1-6) Staff

CS 11 • Literary Structure: Chronological (1-6) Staff
Narrative.

CS 12 • Literary Structure: Non-Chronological (1-6) Staff
Logical, analogical, cyclical and repetitive schemes.

CS 13 • Subjects and Materials (1-6) Staff

CS 14 • Themes and Motifs (1-6) Staff

CS 15 • Student-Conducted Seminar (1-6) Staff
The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Literature/CS 13, and their work will be graded by the adviser in consultation with the student instructor.

Mathematics

CS 1 • Problem Solving (1-6) Staff
Discussion and solution of non-routine mathematical problems.

CS 2 • Project (1-6) Staff
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 3 • Modern Algebra (1-6) Staff
Groups; modules; vector spaces; algebras; metric structures on vector spaces; representation theory; multilinear algebra; graded structures; universal properties; a survey of important algebraic structures.

CS 10 • Student-Conducted Seminar (1-6) Staff
The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Mathematics/CS 1, and their work will be graded by the adviser in consultation with the student instructor.

CS 20 • Special Topics (1-6) Staff

Music

CS 1 • Composition (1-6) Staff

CS 2 • Analysis: Materials (1-6) Staff

CS 3 • Analysis: Forms (1-6) Staff

CS 4 • Aural Disciplines (1-6) Staff

CS 5 • Special Topics (1-6) Staff

CS 15 • Student Conducted Seminar (1-6) Staff
The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Music/CS 1, and their work will be graded by the adviser in consultation with e student instructor.

Physics

CS 1 • Seminar (1-6) Staff
Group study, with regular reports delivered by students on subjects assigned and directed by the instructor.

CS 2 • Laboratory Project (1-6) Staff
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 3 • Reading Project (1-6) Staff
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 10 • Student-Conducted Seminar (1-6) Staff
The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Physics/CS 1, and their work will be graded by the adviser in consultation with the student instructor.

Dance

Associate Professors

Cristyne Lawson; modern technique, ballet, improvisation, environmental choreography, production, ethnic, jazz.

Rona Sande, M.Ed., College of William and Mary; modern technique, aesthetics, criticism, choreography, production, (Director).

Assistant Professors

Alice Condodina; modern technique, labanotation, production choreography and repertory.

Lecturers

Emma Lou O'Brien; music for dance, labanotation, rhythmic analysis.

Isa Partsch Bergsohn, Folkwang Hochschule; history, choreutics, modern technique, ballet, choreography for the theatre, production.

Michael Lopuszanski; ballet.

Concerns of the department

The major in Dance offers the opportunity for an area of emphasis within a liberal arts education, or for preparation in professional work. Course offerings are geared to include the theoretical and technical aspects of dance, as well as a breadth of experience in related arts and sciences. Students who are interested in securing teaching credentials should confer with the Director of Dance regarding the completion of additional requirements.

Admission audition

Students desiring to attend UCSB as dance majors must take an audition for placement in the technique series Dance/46A—F and 156A—F. This is a four year series. Portions of the requirement may be waived according to the results of the entrance audition. Students not able to qualify for Dance/46A, as determined by the entrance audition, will not be able to declare a dance major until such time as they are able to qualify for that class. Auditions will be held in May of the year preceding a student's admission to the University. They will be offered again during orientation week in the Fall for those students unable to attend the Spring auditions. It must be understood, however, that there can be no guarantee of admittance into the program until the audition has been taken and successfully passed. Since the number of students that can be accepted each year is limited, it is advisable that students attend the Spring audition, if at all possible, in order to reserve a place in the program. Audition details may be obtained by writing directly to the Division of Dance.

Bachelor of Arts

For completion of the Bachelor of Arts degree in Dance the student must complete 180 units of University work, including all requirements as outlined by the College of Letters and Science and the major course as outlined below. Technical ability and theoretical knowledge must be demonstrated to the satisfaction of the Dance faculty before entrance to upper division dance study.

Specific courses from the General Education sequence which are required for the Dance major are as follows: Art/1, or 150, Zoology/25 & 25L or 40 & 40L, Music/15 or Dramatic Art/60.

Preparation for the major

Dance/46A—B—C—D—E—F, 47D—E—F, 52, Dramatic Art/5, 23.

Upper Division major

Dance/145A—B, 149, 151A—B and C—D, or E, 154, 156A—B—C—D—E—F, 157; six units elected from the following: Dance/148, 149, 150, 151C, D, or E (whichever not used above), 153, 158, 160, 161, 162, 199; Dramatic Art/149.

It is recommended that the entering student contact the Dance faculty for program planning advice before enrolling, in order to insure the best possible sequence of study.

Career opportunities

The B.A. degree in dance prepares a student for further professional study toward a performing career. It is also the first step toward a career in teaching. Graduates can open their own studios of dance or can teach in private schools or colleges, although a Master's or Doctoral degree is required, in most instances, for a job in a public college or university. The B.A. in dance is also preparation for the Teaching Credential program which is a requisite for high school teaching.

Correspondence information

Division of Dance, Rona Sande, Room 2630, University of California, Santa Barbara, California 93106. Phone: (805) 961-3241.

Teaching credentials

Students who complete the major in Dance may be eligible for pursuing a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Dance

Lower Division courses

42A—B—C • Fundamentals of Ballet Technique (1,1,1) Sande
An introduction to the elements of ballet. Courses must be taken in sequence.

44A—B—C • Elementary Movement Technique (1,1,1) Bergsohn
An introduction to the technical aspects of movement as an expressive medium. Course must be taken in sequence.

45 • History and Appreciation of Dance (4) Bergsohn
Introduction to dance as an art form. A study of the historical periods of dance in close relationship to the other forms of cultural expression.

46A • Modern Dance (3) Bergsohn
Analysis and exploration of the technical aspects of movement as an expressive medium. Includes special emphasis on the temporal aspects of dance.

46B • Modern Dance (3) Bergsohn
Prerequisite: Dance/46A. Analysis and exploration of the technical aspects of movement as an expressive medium. Includes the study of basic musical forms as they relate to dance, with an emphasis on themes and phrases.

46C • Modern Dance (3) Bergsohn
Prerequisite: Dance/46B. Analysis and exploration of the technical aspects of movement as an expressive medium. Includes work in the area of improvisation.

46D—E—F • Intermediate Modern Dance (3,3,3) Sande
Prerequisite: Dance/46C. Analysis and exploration of the technical aspects of movement as an expressive medium at the intermediate level.

47A—B—C • Elementary Ballet (2,2,2) Lawson
Analysis and exploration of technical expressive elements of the ballet.

47D—E—F • Intermediate Ballet (2,2,2) Lawson
Prerequisite: Dance/47C or audition by dance faculty. Further analysis and exploration of technical and expressive elements of ballet.

51 • Improvisation (3) Lawson
Prerequisite: Dance/46C or consent of instructor. The understanding and development of aesthetic awareness in movement through the use of body tensions and energy.

52 • Labanotation (4) Sparrow
Study of the elements of dance notation and interpretation of movement through reading and writing of the dance score culminating in Elementary Labanotation Certification.

54 • Choreutics (3) Bergsohn
Prerequisite: Dance/46C. Analysis and study of the spacial aspects of movement as seen in the research of Rudolf von Laban. Course material designed to stimulate movement experimentation.

Upper Division courses

145A • The Historical Development of Dance (4) Bergsohn
Prerequisite: Upper Division standing or consent of instructor. The study of dance as a reflection of cultural history. The history of theatrical dance from the Renaissance through the 19th century.

145B • The Historical Development of Dance (4) Bergsohn
Prerequisite: Upper Division standing or consent of instructor. The study of dance as a reflection of cultural history. The dance in the 20th century.

147A—B—C • Advanced Ballet (2,2,2) Sande
Prerequisite: Dance 47F or consent of instructor. Advanced analysis and exploration of the technical and expressive elements of ballet.

148 • Summer Dance Repertory (1-6) Bergsohn
Prerequisite: Consent of instructor after audition. A repertory dance theatre laboratory; the study of contemporary choreographic works culminating in a concert. May be repeated for up to 12 units of credit.

149 • Dance Workshop (1-4) Staff
Prerequisite: Consent of instructor. Projects in performance, production, choreography and directing. May be repeated for credit. (Will not count as Upper Division units for the major when taken by Freshmen and Sophomores.)

150 • Historical Dance Forms (3) Bergsohn
Prerequisites: Dance/46C or 47C. Open to Drama Majors with consent of instructor. Analysis of period styles in dance as reflected in theatrical practice from the Pre-Classic through the 19th Century. Course will include practice in the execution of the particular dance forms studied.

151A—B—C • Choreography (3,3,3) Sparrow
Prerequisite: Dance/46F. Analysis of the elements of choreographic form; styles and trends with experience in development of dance studies; theory and technique of advanced group choreography.

151D • Environmental Choreography (3) Lawson
Prerequisites: Dance/151B and Upper Division standing. A process oriented study of scoring, designing and performing dance works in natural landscapes.

151E • Choreography for the Theatre (3) Bergsohn
Prerequisites: Dance/151B and Upper Division standing. A study of the choreographic problems encountered in theatrical assignments. Analysis of three major theatrical works in terms of choreographic movement style and design.

153 • Ethnic Dance Forms (3) Lawson

Prerequisites: Dance/46F or 47F and Upper Division standing. Analysis of the distinctive qualities and characteristics of particular forms of ethnic dance with consideration given to cultural effects on the Americas. May be repeated for up to nine units of credit, with permission of Department Director.

154 • Accompaniment for Dance (3) O'Brien
Prerequisite: Dance/43. Study in accompaniment for dance, including music sources, improvisation, percussion and sound experimentation.

155 • Organization of Dance Production (3) Sparrow
Prerequisite: Consent of instructor. Theory and techniques of organization, direction and production of the public dance performance.

156A—B—C • Advanced Modern Dance (3,3,3) Sande
Prerequisites: Dance/46F and audition by Dance faculty. Advanced analysis and exploration of the technical aspects of dance as an expressive medium.

156D—E—F • Continuing Modern Dance (3,3,3) Lawson
Prerequisite: Dance/156C. Further analysis and exploration of the technical aspects of dance as an expressive medium. May be repeated for credit but only one repetition of each may count toward the major.

157 • Criticism and Analysis (3) Sande
Prerequisite: Consent of instructor. Advanced analysis of choreographic works with practical application in viewing, reviewing and criticism.

158 • Theory of Dance (3) Sparrow
Prerequisites: 46F, 151A. History and theory of dance. An examination and analysis of the literature and materials of dance with practical study in the leading of group movement experiences.

160 • Dance Repertory (2) Sparrow
Prerequisite: Dance/156A or consent of instructor. The study and performance of major choreographic works. May be repeated up to 12 units of credit.

161 • Jazz and Theatre Forms (2) Lawson
Prerequisite: Dance/46C or 47C Jazz as an expressive idiom and dance utilized in theatrical and music productions.

162 • Aesthetics of Dance (4) Sande
Prerequisite: Dance/157. A critical analysis of aesthetic concepts related to dance.

***198 • Group Studies in Dance** (1-4) Staff
Prerequisites: Consent of instructor and department. Group projects in selected areas of emphasis. Enrollment normally limited to 12 or fewer students.

***199 • Independent Study in Dance.** (1-5) Staff
Prerequisites: Consent of instructor and department. Projects in choreography or dance research. 199 Courses are limited to no more than five units in one quarter and no more than 12 units total.

Related courses in Education

390 • Curriculum and Instructional Procedures and Materials Used in the Teaching of Dance (3) Sparrow
Prerequisite: Major or minor in dance and consent of instructor. A study of the basic principles of teaching dance; includes an examination and analysis of the literature and materials of dance education.

392A—B—C • Student Teaching in Dance (4,4,4) Sparrow
Prerequisite: Admission to credential program.

393 • Problems Seminar in the Teaching of Dance (1) Sparrow
Prerequisite: Concurrent enrollment in Ed. Dance/392 series.

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*See L-2 for 198/199 independent studies unit limits.

Dramatic Art

Professors

Stanley L. Glenn, Ph.D., Stanford; acting, directing.
Theodore W. Hatlen, Ph.D., Stanford; dramatic literature, criticism.
William R. Reardon, Ph.D., Stanford; dramatic literature, criticism (Chairman).

Associate Professor

Lucille H. Woolsey, Ph.D. Purdue; costume history.

Assistant Professors

John D. Harrop, Ph.D., UCSB; acting, directing.
Brian P. Johnston, M.A., Cambridge; dramatic literature.
Nancy S. Reinhardt, Ph.D., Cornell; dramatic literature, film.

Lecturers

Alan M. Armstrong, M.F.A., Carnegie Mellon University; costume design.
Jonathan Estrin, M.F.A., UC, Davis; acting.
Robert A. Hawkes, M.F.A., Utah; technical theatre.
Robert Potter, Ph.D., Claremont Graduate School; medieval drama, playwriting.
Marie W. Starr, M.A., UCSB; children's theatre.
Leland K. Strasburg, M.F.A., Utah; technical design.
Kathryne White, M.A., Ohio; voice, reader's theatre.

Concerns of the department

The major in Dramatic Art provides a liberal arts education and preparation for professional or educational work in the theater. The study of dramatic literature and theater history is balanced by studio courses and participation in dramatic production in the campus theaters. The major may lead to graduate work and prepare the student for a teaching credential. The Department of Dramatic Art reserves the privilege of determining the students who will be accepted and who will continue in the Department on the basis of academic achievement and participation in the production program.

Bachelor of Arts

Pre-enrollment for many Dramatic Art courses takes place in the Department Office rather than through normal pre-enrollment procedures. (Check the Schedule of Classes each quarter.) Students must meet the General Education requirements as outline in F of this catalog. All Dramatic Art majors must complete the required core courses as noted below.

Preparation for the Major

Required: Dramatic Art/5, 20, 60, 49*. Transfer students may substitute Dramatic Art/120 and 163 for Dramatic Art/20 and 60 respectively.

Upper Division major

A minimum of 36 Upper Division units are required, including: Dramatic Art/160A—160E, 162, 153A—153B, 149*, and at least two courses from the following—Dramatic Art/102, 106, 160B—160C—160D—160F.

The following areas of emphasis are offered: Acting, Directing, Design and Technical Theater and a Tutorial Liberal Arts Program. The courses in your emphasis must be worked out with your Department Adviser upon entrance. Final declaration of the emphasis and approval by the Department Adviser must be made by the beginning of the junior year.

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*A minimum of 6 units from the Dramatic Art/49—149 series is required. At least 1 unit must be taken in each of the following areas: Costume, set construction and tech.

Emphasis programs

Acting

Dramatic Art/11A—B—C (3); 12 (3); 15A—B—C (9); 26 (1); 111A—B—C (6); 151A—B—C (9) ; 153C (2); 153E (6); 8 units of related courses worked out with adviser; Physical Activities/1-18A—B or C (½).

Directing

Dramatic Art/15A (3); 22 (4); 123 (4); 151A—B—C (9); 153C (2); 153D (4); 8 units of related courses worked out with adviser, Physical Activities/1-18A—B or C (½).

Design and Technical Theater

Dramatic Art/22 (4); 25 (4); 121 (4); 123 (4); 122 (4); 125 (4); 127 (4) (two are recommended); 190 (3); 8 units of related courses worked out with adviser.

Tutorial Liberal Arts Program

Individual programs of study in the areas of Dramatic Literature, Playwriting, Dramatic Theory and Criticism, or Interdisciplinary Studies in Drama (Social Sciences, Philosophy, Arts, etc.). Work with faculty adviser in designing an approved program (28 to 35 units).

Master of Arts

Requirements

In addition to the general requirements for admission to graduate status, the applicant must satisfy the following departmental requirements.

Departmental requirements: Thirty-six units required of which at least 21 units must be from graduate courses 200 and above.

Required distribution: (1) Research methods, 3 units of Dramatic Arts/200; research and production project, 6 units of Dramatic Arts/598AA—ZZ; (2) Literature, Theory, and History, 15 units from Dramatic Arts/102, 103, 106, 146, 148, 160A—F, 162, 210A—E, 255, 272A—G, 294 sequences of which at least 6 units must be above 200; (3) Theatre Arts, 12 units from 101A— B, 104A—C, 120, 121, 122, 123, 125, 127, 131, 132, 133, 140, 141, 149, 151A—C, 153A—D, 235A—C of which a minimum of 6 units must be from 235 sequence with at least 3 units from 235C.

Oral examination of 1½ hours on materials covered in course of study and on research or production project.

Only students who have clearly revealed their scholarly and creative ability will be permitted to undertake doctoral work. The faculty will make this decision at the conclusion of the M.A. program.

Doctor of Philosophy

Requirements

General requirements for admission to graduate status must be fulfilled.

Departmental requirements: During the first year the candidate will pursue a course of study leading to the M.A. degree. A student entering from another institution with an M.A. awarded without thesis or research investigation may be required to demonstrate research proficiency before proceeding with the doctoral program. A similar demonstration may be required for appropriate theatre areas.

During the second year the candidate will complete the language requirements and prepare for a comprehensive examination. There are three options for fulfillment of the language requirement. Option 1: Two languages at a reading level (ETS Graduate Foreign Language Tests). One language must be French, German, or Russian. Option 2: Any foreign language needed for doctoral research may be pursued to a level of oral and written proficiency. Such proficiency will be attested by the appropriate foreign language department which will administer the test. Option 3: A student may elect not to offer a language but to offer instead a series of breadth of depth courses effectively tailored to individual needs by the Graduate Adviser and approved by the Graduate Division. No dissertation utilizing materials in another language would be possible under Option 3.

Normally a heavy sequency of courses in dramatic literature will be taken. The candidate must pass departmental written examinations in dramatic literature, dramatic theory and criticism, history of the theatre, history and theory of acting and directing, and a special area of interest. Having passed these examinations, the student will be permitted to take the comprehensive examination and will be recommended for advancement to candidacy upon successful completion.

The third year will normally be spent in the research, writing, and oral defense of the dissertation. Approximately 30 units will be devoted to dissertation work.

Doctoral candidates must have experience as a Teaching Assistant in Dramatic Art.

Teaching credentials

Students who complete a major in Dramatic Art may be eligible for pursuing a California teaching credential. A student intending to secure a credential should confer with designated counselors in the Department of Dramatic Art.

Specific details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office, as noted above, prior to the fall quarter in the year in which the advanced degree will be completed.

Career opportunities

People with a dramatic art major may lean toward a professional career in theater, television or films. A larger number tend to go into teaching careers at all levels. Some move into community theater activities or involvement in industrial theater. A few will probably get involved in government activities such as "The Voice of America." Some have used dramatic art more as a vital part of their training toward attaining self-assurance and confidence for professions not directly aligned to theater — law, the ministry or business.

Correspondence information

Department of Dramatic Art, Speech and Drama Bldg., Room 2645, University of California, Santa Barbara, California 93106. Phone (805) 961-3241.

Dramatic Art

Lower Division courses

5 • Introduction to Acting (3)
An introduction for majors and non-majors to the multiple problems of the actor's art and craft.

11A—B—C • Voice and Movement Laboratory (1,1,1) White
The fundamental crafts of Voice and Movement for the actor with emphasis on vocal production, articulation, and quality; body posture, balance, and flexibility. Must be taken by those enrolled in D.A. 15A—B—C but may also be taken independently of 15A—B—C, with consent of the instructor.

12 • Fundamentals of Mime (3) White
Practical experience in traditional forms and experimental work in creative studies in mine.

15A • Fundamentals of Acting (3) Estrin
Prerequisites: Dramatic Art/5 and consent of instructor. Basic work in voice, movement, and improvisation to develop the beginning actor's understanding and artistic growth. Dramatic Art 11A *must* be taken in conjunction with this course.

15B • Fundamentals of Acting (3) Estrin
Prerequisites: Dramatic Art/15A and consent of instructor. Further development of the actor's skills with emphasis on scene analysis and presentation. Student must take 11B in conjunction with this course.

15C • Fundamentals of Acting (3) Estrin
Prerequisites: Dramatic Art/15B and consent of instructor. Problems in interpretation and characterization. Student must take 11C in conjunction with this course.

20 • Technical Theatre Production (4) Hawkes
Survey of scenographic techniques including technical production, set and costume design.

22 • Scenic Design (4) Strasburg
Projects in the interpretation of plays through scenic elements with concentration on the tools of the designer, floor plans, renderings, models and elevations.

***23 • Stage Lighting Design** (4)
Lecture-demonstration in instrumentation, color in light, control equipment and basic lighting design theories. Practical application through laboratory assignments and participation in productions.

25 • Costume Design (4) Armstrong
Exploration of basic elements of design, (color, texture, line, mass, etc.) and rendering techniques in a series of weekly exercises related to specific dramatic literature texts.

26 • The Art and Craft of Stage Makeup (1) Armstrong
The materials of makeup. Application of juvenile, character, and period makeup for the stage.

***27 • Theatre Graphics** (3) Strasburg
Rendering techniques for scenic and costume design.

31 • Basic Costume Construction and Pattern Drafting (3) Woolsey
Fundamental construction techniques (seams, linings, interlinings, facings, closings, hand and finishing work); basic pattern drafting, cutting, fitting and construction (in muslin) of contemporary and period garments.

32 • Basic Textiles (4) Woolsey
A study of fibers, fabric structures, and finishes as related to the properties, characteristics and behavior of textile fabrics.

46 • Introduction to Motion Pictures (4) Reinhardt
Introduction to the study of film; analysis of motion picture types and styles: film imagery and syntax; study and discussion of important filmic works.

49 • Theatre Workshop (1-6) Staff
Projects in costume, scenery, lighting, acting, directing. May be repeated for credit.

60 • The Understanding of Drama (4) Reinhardt
The general nature of dramatic presentation, including elements of dramatic structure, types of drama, the contributions of the actor, director, designer, technician, and audience. Films, video tapes, and live performances will be studied whenever possible.

Upper Division courses:

101A • Children's Theatre (2) Starr
Study of special techniques involved in producing plays for the Child Audience. Analytical survey of writing, staging, and acting for the Child Audience including Story Theatre, Reader's Theatre, and Creative Dramatics.

101B • Children's Theatre (2) Starr
Class to produce a Children's Play for public performance. Highest professional standards demanded in all aspects of production. 101B students must also be enrolled in 101A.

101C • Creative Children's Theatre (4) Starr
Prerequisites: Dramatic Art/101A—B and consent of instructor. Creation of a Children's Play project by the class through Creative Dramatics and Improvisational Theatre Techniques. Completed project to be toured to schools in Spring Quarter.

101D • Creative Children's Theatre on Tour (2) Starr
Prerequisites: Dramatic Art/101A—B—C and consent of instructor. Final rehearsals of completed Project outside of seminar. Tour area Elementary Schools and present performances.

102 • History of the Theatre (4)
The history of the playhouse, the practitioner and dramatic production from the Greeks to the present.

***103 • Black Drama** (3)
Discussion of Black drama and theater in America treating the contribution and involvement of black artists in the drama and theater in this country.

104A • Playwriting: An Introductory Course (4) Potter
Exploration of ideas for the stage. Experiments with mime, monologue, dialogue, scene. Characters and action. Resources of the stage, principles of economoy. Analysis of scripts on paper and in production. A series of written assignments, and a final project (scenes from a work in progress).

104B • Advanced Playwriting (4) Potter
Prerequisites: Completion of 104A (or submission of written Material) and consent of the instructor. Development of selected student projects into completed working scripts; further studies in script analysis. Writing and re-writing.

104C • Script Workshop (1-4) Potter
Prerequisite: Consent of instructor. A. Playwriting Workshop. Rehearsal and production of selected student scripts, in collaboration with student actors, director, etc. B. Media Script Workshop. Radio, film and video projects.

***105A • Introduction to Chicano Theatre** (3)
Prerequisite: Consent of instructor. Focusing on basic concepts and techniques of Chicano Teatro, this course will explore the historical development of the Teatro form and experiment with various modes of realizing the acting styles and production techniques of the Teatro. As heavy emphasis will be placed on the particular acting problems involved students are urged to enroll simultaneously in DA/5.

***105B • Development of Chicano Theatre** (3)
Prerequisite: Consent of instructor. With an intensive concentration on the preparation of Chicano theatre material for presentation this course will include the writing of Acts and plays; the exploration of improvisational techniques; the development of "open-ended" scenarios; and the creation of effective scenic, mask and costume techniques for Chicano theatre.

***105C • Chicano Theatre in Performance** (3)
Prerequisite: Consent of instructor. Utilizing the experience and materials created in DA/105A and B, a series of performance events will be moulded in four weeks of intensive rehearsal. The remainder of the quarter will be given to an extensive series of performances by the Teatro group, including presentations in schools, prisons, parks, community centers and theatres.

106 • Dramatic Theory and Criticism (4) Johnston
Survey and discussion of the major theorists and critics of the drama from the Greeks to the present day.

111A—B—C • Advanced Voice and Movement Laboratory (2,2,2) White
Advanced problems in voice and movement for the actor with continued emphasis on craft, plus the creative and expressive uses of the voice and body. Must be taken by those enrolled in 151A—B—C, but may also be taken independent of 151A—B—C, with permission of the Instructor.

115 • Summer Repertory Theatre (1-6) Staff
Prerequisite: Consent of instructor. Description: A summer repertory theatre workshop emphasizing styles of acting culminating in production. Enrollment by audition only. May be repeated up to 12 units of credit.

117 • Theatre in England (3) Glenn
Designed to teach in depth and out of actual experience the relations between the scripts of great plays and the best available productions of these plays. Must be taken in conjunction with English/117A or B. (Summer.)

120 • Survey of Theatrical Techniques (4) Hawkes
Survey of scenographic techniques from Craig and Appia, with emphasis on contemporary methods in costume, scenery and lights. May not be taken by students who have taken Dramatic Art/20.

Not to be given in 1975-76.

121 • Advanced Technical Theater Production (4) Hawkes
Description: Advanced problems in planning, drafting, construction, mounting and rigging of stage scenery.

122 • Advanced Scenic Design (4) Strasburg
Concentration on set design problems of various styles. Projects to include perspective sketches, elevations and models.

123 • Advanced Stage Lighting Design (4) Strasburg
Intensive work in lighting design plots with practical application of projects on stage.

125 • Advanced Costume Design (4) Armstrong
Execution of costume design for Greek or Elizabethan text. Emphasis on conceptual bases and subsequent characterization.

127 • Problems in Technical Theatre (4)
Description: Advanced technological research applied to special problems in theatrical design.

128 • Advanced Production Design (3) Technical Staff
Study of total production design to include projects in costume, set and lighting design. Concentration on the concept of stylistic unity through the visual elements of dramatic production.

131 • Advanced Costume Construction and Tailoring (4) Woolsey
Special problems in costuming including the construction (in wool) of a tailored garment.

132 • Historic Textiles, Interiors and Furnishings (4) Woolsey
A survey of the development of textiles, interiors and furnishings from the Egyptians to the present as related to the changing patterns of culture.

133 • History of Costume (4) Woolsey
A survey of the development of costume from the Egyptians to the present as related to the changing patterns of culture.

140 • Dramatic Interpretation of Literature (4) White
Study of the principles in Dramatic Interpretation and practical experience in the Dramatic Interpretation of dramas, dramatic poetry and novels.

141 • Reader's Theatre (4) White
Study of the different concepts of Reader's Theatre and practical experience in the preparation and performance of dramas, dramatic poetry and novels in the Reader's Theatre style.

146 • Aesthetics of Film (4) Sesonske
The nature of film; its relation to the other arts; film genres; elements of film criticism; description, interpretation and evaluation of film.

148 • The History and Development of the Motion Picture (3) Sesonske
Study of world cinema since 1890's. Development of film as an art form and as a cultural, economic and social force.

149 • Theatre Workshop (1-6) Staff
Projects in costume, scenery, lighting, acting, directing. May be repeated for credit.

150 • Theatre in Process (1-4) Staff
The workshop will provide opportunity for students to work upon performance projects of their own initiation. Such projects might include experimental work, original work or any theatrical endeavour which fits within the technical scope of the course. The emphasis of the course is upon work in progress, it is not intended to lead to formal production.

151A • Advanced Acting: Tragic Style (3) Glenn, Harrop
Prerequisites: Dramatic Art/12 and 15C and consent of instructor. Scenes and exercises re-examining the conventions of serious plays from selected periods of dramatic art. Students must take 111A in conjunction with this course.

151B • Advanced Acting: The Craft of Comedy (3) Glenn, Harrop
Prerequisites: Dramatic Art/151A and consent of instructor. Scenes and exercises in various modes of comic acting ranging from farce to high comedy. Dramatic Art/111B must be taken in conjunction with this course.

151C • Advanced Acting: Modern Trends (3) Harrop, Glenn
Prerequisites: Dramatic Art/151B and consent of instructor. Study and performance of contemporary acting developments. Dramatic Art/111C must be taken with this course.

153A • Theory of Directing (2-4) Glenn, Harrop
Prerequisite: Consent of instructor. The director's initial approach to the play: research, textual study, and formal analysis.

153B • Techniques of Directing (2) Glenn, Harrop
Prerequisites: Dramatic Art/153A and consent of instructor. Lectures and demonstrations of directorial skills in composition, movement and business.

153C • Techniques of Directing: Laboratory (2) Glenn, Harrop
Prerequisites: Dramatic Art/153A and consent of instructor. Exercises and scenes employing directorial skills. May be taken only in conjunction with 153B.

153D • Projects in Directing (4) Glenn, Harrop
Prerequisites: Dramatic Art/153B, C and consent of instructor. Directing emphasis only. Full directorial responsibbbility for this direction of a one-act play.

153E • Projects in Acting (2) Staff
Prerequisite: Dramatic Art/153C. Selected acting assignments. May be repeated.

160A • Development of Dramatic Art (4) Glenn
A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from its origin in the Western World through the Greeks to the Roman Empire.

160B • Development of Dramatic Art (4) Potter
A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from the Middle Ages to the Jacobean period, focusing upon the development of the Renaissance theater in England and Spain.

160C • Development of Dramatic Art (4) Harrop
A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from the Jacobean period through the development of Neo-Classicism in France and Restoration England.

160D • Development of Dramatic Art (4) Johnston
A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from 1700 to the rise of Realism, emphasizing the Romantic movement, Melodrama and the emergence of the "well-made play."

160E • Development of Dramatic Art (4) Johnston
A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from Ibsen to the end of World War I, examining divergent trends in the Modern theater.

160F • Development of Dramatic Art (4) Johnston
A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from the end of World War I to the present, treating various aspects of the Contemporary theater.

162 • Shakespeare on Film and Stage (4) Potter
An investigation of Shakespeare's plays through the media of performance; viewing of Shakespearean productions on film and videotape, in classroom rehearsal, and in stage performances as available; reading and critical analysis of selected Shakespearean plays.

163 • Word Drama and Theatre (4) Reinhardt
A study of representative plays from major periods in the development of dramatic art. Emphasis on the Western world, but some examples from Oriental theatre. Comparative analysis of historical and social contexts, physical theatre, and production techniques. Films, videotapes, and live performances will be studied whenever possible. **Not open to students who have taken Dramatic Art/60.**

190 • Production Administration (3)
Prerequisites: consent of instructor, and department chairman's approval. Workshop for advanced student functioning as assistants to directors, designers, and technical directors. Portfolio, promptbook or paper required. May be repeated up to nine hours of credit.

191 • Theatre Management (4) Small
Prerequisites: Consent of instructor. Business organization and management for the educational, community, and professional theatre, including budgeting, publicity, public relations and box office principles.

194 • Group Studies for Advanced Students (1-4) Staff
Prerequisites: Senior standing and consent of the department chairman. Description: Intensive study, research and project preparation. May be repeated up to eight hours credit. Enrollment normally limited to 12 or fewer students.

***199 • Independent Studies in Dramatic Art** (1-5) Staff
199 Courses are limited to no more than five units in one quarter and no more than 15 units total.

Graduate courses

200 • Introduction to Graduate Study in Dramatic Art (3) Reardon
Prerequisite: Graduate standing. Discussion and utilization of various research techniques. Bibliographical work accentuated.

210A • Tragic Drama (3) Hatlen
Prerequisite: Graduate standing. Tragic masterpieces from Greeks to the present.

210B. • Comic Drama (3) Hatlen
Prerequisite: Graduate standing. Comic masterpieces from Greeks to the present.

210C • Drama of Mixed Genres (3) Johnston
Prerequisite: Graduate standing. Masterpieces of intermingled forms from Greeks to the present.

210D • American Theater and Drama to 1895 (3) Reardon
Prerequisite: Graduate standing. From origins of both to the rise of realism and the Theatrical Syndicate.

210E • American Theater and Drama from 1895 (3) Reardon
Prerequisite: Graduate standing. From the Theatrical Syndi-

*See L-2 for 198/199 independent studies unit limitations.

cate and the new art and drama movement to the present day.

235A • Advanced Problems in Directing (3) Harrop, Glenn
Prerequisite: Graduate standing. Discussion of advanced problems in directing; practical application and projects. May be repeated up to six hours credit.

235B • Advanced Problems in Design (3)
Prerequisite: Graduate standing. Discussion of advanced problems in design; practical application and projects. May be repeated up to six hours credit.

235C • Advanced Problems in Theater Practice (1-12)
Prerequisite: Graduate standing. Discussion of problems in repertory; practical application of specialized individual projects. A student may take no more than six units on the M.A. and no more than six units on the Ph.D.

255 • Seminar in Film (3) Sesonske
Prerequisite: Dramatic Art/46 or Philosophy/136. Elements of film and its critical vocabulary, studied through the examination of the work of a distinguished director. Typical topics would include: visual style, expressive movement in film, character, acting, symbolism, describing a film, reality and fantasy, photography.

272A • Seminar in Theories of Acting and Directing (3)
Prerequisite: Graduate standing. Examination of the major theoretical works of the past and present on acting and directing.

272B • Seminar in Dramatic Theory: Aristotle to Lessing (3) Reardon, Hatlen
Prerequisite: Graduate standing. Detailed study of theories from *The Poetics* to the *Hamburg Dramaturgy.*

272C • Seminar in Modern Dramatic Theory. (3) Johnston.
Prerequisite: Graduate standing. Major theories and concepts from Lessing to Langer.

272D • Seminar in History of Physical Theater and Design (3) Hatlen
Prerequisite: Graduate standing. Description: Examination of the physical theater and stage design from ancient Greece to the present.

272F • Seminar in Non-Western Drama and Theater (3) Hatlen
Prerequisite: Graduate standing. Oriental and Indian styles in drama and theater.

272G • Seminar in Dramatic Literature and Theater History (3)
Prerequisite: Graduate standing. Studies in Drama utilizing whenever possible visiting scholars and specialists in theatre and drama. Content variable. Will be offered irregularly.

294 • Studies in Drama (3)
Prerequisite: Graduate standing. Studies in Drama utilizing whenever possible visiting scholars and specialists in theatre and drama. Content variable. Will be offered irregularly.

596AA—ZZ • Directed Reading and Research (2-6)
Prerequisite: Consent of instructor. Individual tutorial. A written proposal for each tutorial must be approved by the department chairman and filed with the Graduate Division. S/U grade may be given while in progress, but to be converted to letter grade on conclusion.

597AA—ZZ • Individual Study for Master's Comprehensive and Ph.D. Examinations (1-12)
Prerequisite: Consent of instructor. No unit credit allowed toward advanced degree. S/U grade.

598AA—ZZ • Master's Project, Research and Creative (1-6)
Prerequisite: Consent of Instructor. May be taken for a maximum of six units. S/U grade.

599AA—ZZ • Dissertation Research and Preparation (1-12)
Prerequisite: Consent of chairman of student's doctoral committee. Normally limited to a total of 36 units. S/U grade.

Related courses in Education

390 • Curriculum and Instructional Procedures and Materials Used in the Teaching of Dramatic Art (3)
Prerequisite: Consent of instructor. A study of the basic principles of teaching dramatic art; includes an examination and analysis of the literature and materials of dramatic art education.

392 • Student Teaching: Dramatic Art (3-6)
Prerequisite: Consent of instructor. May be repeated.

393 • Problems Seminar in the Dramatic Art Major. (1)
Prerequisite: Consent of instructor. May be repeated for two units.

Eastern Languages

Professors

Robert Hetzron, Ph.D., UCLA; general, Semitic, Ethiopian and Hungarian linguistics.

Associate Professors

Robert L. Backus, Ph.D., Berkeley: Japanese language and literature

[1]*Chauncey S. Goodrich,* Ph.D., Berkeley; aspects of ancient Chinese civilization (1000 B.C. to A.D. 600) as seen in literary and historical sources. Kingship and related subjects. (Vice-Chairman in charge of Eastern languages, Department of Germanic Languages and Literatures).

Kenneth H. Pai, M.F.A., Iowa State; Mandarin language and modern Chinese literature.

Charles Wendell, Ph.D., UCLA; classical Arabic and Persian languages and literatures, Islamic civilization: religion, history, society, intellectual history.

Assistant Professor

Kuo Ch'ing Tu., Ph.D., Stanford; modern Chinese language and Chinese poetry.

Lecturers

Keiko E. Mochizuki, B.A., Tokyo Women's Christian College; beginning and intermediate Japanese language and translations.

Concerns of the department

Four oriental languages are taught at UCSB under the aegis of the Department of Germanic and Slavic Languages: Chinese, Japanese, Arabic and Hebrew. All are languages of great cultural and historical importance for a variety of reasons. Each of these languages may be used in satisfaction of the language requirements of one of the two interdisciplinary programs dealing with the Orient; thus either Chinese or Japanese may be pursued in connection with the Asian Studies major, while either Arabic or Hebrew may accompany the major in Middle Eastern Studies. Moreover, students in a variety of disciplines (e.g., Anthropology, Art, History, Linguistics, Philosophy, Political Science or Religious Studies) may find their work greatly enhanced by the acquisition of a knowledge of one of these languages. In most cases one cannot hope to do advanced professional work in fields involving the Orient without a knowledge of the language concerned. Finally, these languages and literatures are, of course, worthy of study for their own sake, embodying as they do such a large and significant portion of the thought and experience of mankind.

[1] On Leave 1975-76.

These four languages correspond exactly to four of the University of California centers for Education Abroad (Hong Kong, Tokyo, Jerusalem and Beirut). Prior study of the language concerned is either required or highly recommended in every case.

At present there is a major program only in Chinese. This program provides the opportunity to study both modern Mandarin and Classical Chinese, the dominant literary medium until the twentieth century. All the languages offered may, however, be pursued at both the lower and upper division level.

Classes in Eastern Languages are usually relatively small, and the student can expect to get a maximum of attention from the Instructor.

Bachelor of Arts — Chinese

Preparation for the major

Students may elect to emphasize either Mandarin or Classical Chinese. Those who wish to emphasize Mandarin must take at least three quarters of Classical Chinese; those who wish to emphasize Classical Chinese must take at least three quarters of Mandarin.

The following courses are prescribed: Chinese/1, 2, 3, 4, 5, 6 (for those emphasizing Mandarin); Chinese/1, 2, 3, 101A—B—C (for those emphasizing Classical Chinese); two quarters of Chinese/8A—B—C; History/86. Art/6D is recommended.

Upper Division major

Forty upper division units dealing with China, of which at least twenty-four must be in language courses. Eight of the 40 units must be chosen from History/184, 185A—B, 186A—B—C, and 190, the balanc being selected from Chinese/110A—B, 112, and Linguistics/120A (Sino-Tibetan family). Recommended electives are Anthropology/145; Art/182A—B; Philosophy/123; Political Science/131, 136 Religious Studies/164A—B, 166, 168.

Career opportunities

Study of the oriental languages can be of career assistance in a number of ways. Graduates in recent years have gone into diplomacy museum work and advanced study in preparation for university teaching. Relations with Asian nations also afford opportunities for the use of language in commerce, transportation, journalism, and so on.

Teaching credentials

Students who complete a major in Chinese may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

Department of Germanic and Slavic Languages, Phelps Hall, Rm 6206, University of California, Santa Barbara, California 93106 Phone: (805) 961-2131.

Near East

Arabic

Lower Division courses

1 • Elementary Arabic (4) Wendell
Offered Fall quarter only.

2 • Elementary Arabic (4) Wendell
Prerequisite: Arabic/1 or equivalent. (Continuation of Arabic/1.)

3 • Elementary Arabic (4) Wendell
Prerequisite: Arabic/2 or equivalent. (Continuation of 2.)

4 • Intermediate Arabic (4) Wendell
Prerequisite: Arabic/3 or equivalent. (Continuation of 3.)

5 • Intermediate Arabic (4) Wendell
Prerequisite: Arabic/4 or equivalent. (Continuation of 4.)

Upper Division courses

110 • Arabic Literature in Translation (4) Wendell

***198 • Readings in Arabic** (1-2) Wendell

Hebrew

Lower Division courses

1 • Elementary Hebrew (4) Hetzron
Offered Fall quarter only.

2 • Elementary Hebrew (4) Hetzron
Prerequisite: Hebrew/1 or equivalent. (Continuation of 1.)

3 • Elementary Hebrew (4) Hetzron
Prerequisite: Hebrew/2 or equivalent. (Continuation of 2.)

Upper Division courses

110 • Hebrew Literature in Translation (4) Hetzron

115A—B—C • Readings in Israeli Hebrew (3,3,3) Hetzron
Prerequisite: Hebrew/3 or equivalent. Intermediate and advanced readings in Israeli Hebrew; grammar review and conversational exercises.

120A—B—C • Introductory Biblical Hebrew (2,2,2) Hetzron
Prerequisite: Hebrew/3 or equivalent. Grammatical features of Biblical Hebrew, elementary reading in the Hebrew Bible.

***199 • Independent Studies in Hebrew** (1-5) Hetzron
Prerequisite: Upper Division standing. 199 courses are limited to five units in one quarter and 12 units total.

Semitic languages

Upper Division courses

120A—B—C • Historical Semitic Linguistics (3,3,3) Hetzron. An introduction to the history of the Semitic languages, reconstruction of Proto-Semitic step-by-step regressively by confronting all the Semitic languages. **A.** Phonemic system and phonetic developments; **B.** Morphology and syntax; **C.** Specific problems in individualized groups.

Graduate courses

596 • Directed Reading and Research (2-4) Hetzron
Prerequisite: Advanced Graduate standing. Individual tutorial. A written proposal for each tutorial must be approved by department chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter.

Far East

Chinese

Lower Division courses

1 • Elementary Modern Chinese (4) Pai
Prerequisite: None. Offered Fall quarter only.

2 • Elementary Modern Chinese (4) Pai
Continuation of 1.

3 • Elementary Modern Chinese (4) Pai
Continuation of 2.

4 • Intermediate Modern Chinese (4) Tu
Continuation of 3.

5 • Intermediate Modern Chinese (4) Tu
Continuation of 4.

6 • Intermediate Modern Chinese (4) Tu
Continuation of 5.

8A—B—C • Chinese Conversation (2,2,2) Pai
Prerequisites: Chinese/3 or equivalent.

Upper Division courses

101A—B—C • Elementary Classical Chinese (4,4,4) Goodrich
Prerequisite: Chinese/3. The readings will mainly consist in

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*See L-2 for 198/199 independent studies unit limitations.

material from ancient prose works such as the *Chan-kuo ts'e* and *Han-fei tzu*. Students will be expected to acquire a grasp of the fundamentals of Classical Chinese grammar and also some knowledge of ancient Chinese history and literature.

110A—B • Survey of Classical Chinese Literature (2,2) Goodrich
Traditional literature from the *Shih ching* to the Yuan Dynasty. Readings, lectures and discussion in English.

112 • Survey of Modern Chinese Literature (3) Pai, Tu
The literature of modern China from the *Hung-lou-meng* to the present, emphasizing the literature of the May Fourth Movement. Readings, lectures and discussions in English.

120A—B—C • Readings in Modern Social and Political Writings (4,4,4) Pai, Tu
Prerequisite: Chinese/6 or equivalent. Selected readings in Chinese language on social and political writings.

122A—B • Advanced Modern Chinese (4,4) Pai, Tu
Prerequisite: Chinese/6 or equivalent. Advanced practice in grammar and composition.

124A—B—C • Readings in Modern Chinese Literature (4,4,4) Pai, Tu
Prerequisite: Chinese/6 or equivalent. Readings in the Chinese language in fiction, drama, and poetry written after 1919.

130A—B—C • Intermediate Classical Chinese (4,4,4) Goodrich
Prerequisite: Chinese/101C. Readings to be mainly in ancient prose, emphasizing the historical and philosophical literature, with grammatical and philological exegesis as needed.

131 • Selections from Classical Prose (3) Goodrich
Prerequisite: Chinese/130A—B—C or equivalent. The reading of important works of classical prose representing various periods and genres (history, philosophy, the essay).

132 • Selections from Classical Poetry (3) Goodrich
Prerequisite: Chinese/130A—B—C or equivalent. The reading of poems from various periods, especially the T'ang Dynasty.

140 • Topics in Chinese Culture (4) Goodrich
Various aspects of Chinese traditional culture, emphasizing religion, ritual and the Emperor.

***199 • Independent Studies in Chinese** (1-5) Staff
Prerequisite: Upper Division standing. 199 courses are limited to five units in one quarter and 12 units total.

Graduate courses

596 • Directed Reading and Research (2-4) Staff
Prerequisite: Advanced graduate standing. Individual tutorial. A written proposal for each tutorial must be approved by department chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter.

Japanese

Lower Division courses

1 • Elementary Japanese (4) Mochizuki
Offered Fall quarter only.

2 • Elementary Japanese (4) Mochizuki
Continuation of 1.

3 • Elementary Japanese (4) Mochizuki
Continuation of 2.

4 • Intermediate Japanese (4) Mochizuki
Continuation of 3.

5 • Intermediate Japanese (4) Mochizuki
Continuation of 4.

6 • Intermediate Japanese (4) Mochizuki
Continuation of 5.

8A—B—C • Japanese Conversation (2,2,2) Mochizuki
Prerequisite: Japanese/3 or equivalent. The course is designed to increase facility and naturalness of delivery in simple dialogue.

Upper Division courses

101 • The Structure of Classical Japanese (2) Backus
Prerequisite: Japanese/5 or equivalent. An introduction to the classical language presented through selections from Heian period literature.

105A—B—C • Composition and Conversation (4,4,4) Backus
Prerequisite: Japanese/6 or equivalent. Controlled composition and conversation based on a text. This course will complement and run parallel with the 120 series. 120A—B—C will concentrate on reading (the passive aspect) and 105A—B—C will concentrate on production in written and oral form (the active aspect).

110A—B • Survey of Pre-Modern Japanese Literature (4,4) Backus
A survey of Japanese literature from its beginning to 1867. Readings, lectures and discussions in English.

112 • Survey of Modern Japanese Literature (4) Backus
A survey of Japanese literature after contact with the West, from 1868 to the present. Readings, lectures and discussions in English.

120 A—B—C • Readings in Modern Japanese (4,4,4) Backus
Prerequisite: Japanese/6 or equivalent.

140A—B—C • Topics in Japanese Culture (4,4,4) Staff
Distinctive features of Japanese culture approached through the Japanese way of thinking, comprising Shinto (A), traditional thought (B), and modern Japanese thought (C). Readings are in English.

***199 • Independent Studies in Japanese** (1-4) Backus
Prerequisite: Upper Division standing. 199 courses are limited to five units in one quarter and 12 units total.

Graduate courses

596 • Directed Reading and Research (2-4) Backus
Prerequisite: Advanced graduate standing. Individual tutorial. A written proposal for each tutorial must be approved by department chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter.

Courses in other departments

Sanskrit: See Religious Studies/159A—B—C.
Persian: See Religious Studies/157A—B—C.
Languages of the Far East: See Linguistics/120A.

Foreign literatures in English translation

(Literature courses for which no knowledge of a foreign language is required.)

Arabic

110 • Arabic Literature in Translation (4) Wendell

Hebrew

110 • Hebrew Literature in Translation (4) Hetzron

Chinese

110A—B • Survey of Classical Chinese Literature (2,2) Goodrich
Traditional literature from the *Shih ching* to the Yuan Dynasty. Readings, lectures and discussions in English.

112 • Survey of Modern Chinese Literature (3) Pai
The literature of modern China from the *Hung-lou-meng* to the present, emphasizing the literature of the May Fourth Movement. Readings, lectures and discussions in English.

Japanese

110A—B • Survey of Pre-Modern Japanese Literature (4-4) Backus
A survey of Japanese literature from its beginning to 1867. Readings, lectures, and discussions in English.

112 • Survey of Modern Japanese Literature (4) Backus
A survey of Japanese literature after contact with the West, from 1868 to the present. Readings, lectures, and discussions in English.

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*See L-2 for 198/199 independent studies unit limitations.

Economics

Professors

Alec P. Alexander, Ph.D., Berkeley; economic development, Vice-Chancellor, Academic Affairs.
[1]*Mortimer Andron,* Ph.D., Illinois; investments, financial management.
William S. Connor, Ph.D., Harvard, microeconomic theory, industrial organization.
Robert L. Crouch, Ph.D., Essex; economic theory, money.
[2]*M. Bruce Johnson,* Ph.D., Northwestern; economic theory.
William Kennedy, Ph.D., Wisconsin; history of economic theory.
Walter J. Mead, Ph.D., Oregon; industrial organization, natural resources.
[2]*Robert Weintraub,* Ph.D., Chicago; money and banking, macroeconomic theory.

Associate Professors

Lloyd J. Mercer, Ph.D., Washington; economic history, microeconomic theory, Chairman.
W. Douglas Morgan, Ph.D., Berkeley: public finance, macro-economic theory.
Llad Phillips, Ph.D., Harvard; labor economics, econometrics, economics of criminal justice.
John E. Pippenger, Ph.D., UCLA; international finance, money.
[2]*Perry Shapiro,* Ph.D., Berkeley; urban and regional economics, economic theory.
Harold L. Votey, Jr., Ph.D., Berkeley; economic development, international trade, economics of criminal justice.

Assistant Professors

Robert Deacon, Ph.D., Washington; resource economics, economic theory.
H. E. Frech, III, Ph.D., UCLA; health economics, micro-economic theory.
John Marshall, Ph.D., Massachusetts Institute of Technology; urban and regional economics, economic theory.
[2]*Robert McGuckin,* Ph.D., SUNY, Buffalo; industrial organization, micro-economic theory.
Donald Winkler, Ph.D., Berkeley; economics of education, urban economics.

Lecturers

Carroll Barrymore, J.D., Michigan; law.
Robert J. Swenson, M.B.A., C.P.A., Harvard; accounting.

Concerns of the department

The undergraduate programs in economics, business economics and economics-mathematics are designed to serve several objectives. In combination with other courses in the College of Letters and Science, the majors provide opportunity for general cultural and intellectual development. The majors are particularly useful in supplying basic training for students planning careers in business or government and offer valuable preparation for various professions including law and journalism. The economics and economics-mathematics majors provide the opportunity to build a solid foundation for graduate study in either economics or administration. The business economics major provides the same opportunity with respect to graduate work in administration.

Bachelor of Arts — Economics

Preparation for the major

Three Lower Division courses are required. These are Economics/1 and 2 and either Economics/5 or 6. More advanced mathematics or statistics courses may be substituted for Economics/5 or 6. Economics/5 or 6 should be completed before Upper Division work. Upper Division students transferring to the economics major from another major or another institution may take Economics/109 rather than Economics/1 and 2. Economics/109 may be taken concurrently with Economics/100A, 104A, 101 or 105.

Upper Division major

Thirty-six Upper Division units in economics are necessary for the major. Three courses, Economics/100A or 104A, 100B or 104B, and 101 or 105, are required. The student may choose 24 units of other Upper Division economics courses with the restriction that Economics/109 does not count toward the Upper Division requirements. Credit will *not* be allowed for both 100A and 104A, or both 100B and 104B, or both 101 and 105.

Bachelor of Arts — Business Economics

Preparation for the major

Courses required as preparation for the major are the same as those for the Economics major except that Economics/3A and 3B are required in addition.

Upper Division major

Requirements for the business economics major are the same as for the economics major with the exception that at least four upper division electives must be selected from the following courses: Economics/102A, 116, 118A—B, 124, 132A—B, 133, 134, 136A—B, 137A—B, 138A—B, 139A—B, and 175.

Bachelor of Arts — Economics/Mathematics

Preparation for the major

Seven or eight Lower Division courses are required as preparation for this major. These are Economics/1 and 2 and Mathematics/3A—B—C, 4A—B and 8. Mathematics/11A—B may be substituted for Mathematics/3A—B—C. Upper Division students transferring from another major or institution may substitute Economics/109 for Economics/1 and 2.

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[1] On Leave Fall and Spring, 1975-76.
[2] On Leave 1975-76.

Upper Division major

Forty Upper Division units in economics and mathematics with a minimum of 16 units in each department, are required for the major. Economics 109 and Mathematics 100 A—B—C do not count toward this Upper Division requirement. The following courses are required: Economics/104A—B, Economics 105, Mathematics/108A—B and either Economics/141A—B—C, or Mathematics/120A—B—C. For breadth, further elective courses are recommended in applied fields of economics and in mathematics courses concerned with optimization. Students should consult closely with their advisor in the Economics or Mathematics Department concerning their upper division program.

Combination Social Sciences major

Students interested in obtaining a major in the combined social sciences, see listing under "Social Sciences".

Master of Arts

Requirements

An undergraduate major in economics is not required for admission to the graduate program, but the Department does require that specific courses — particularly economic theory — be passed with distinction. At least one quarter of calculus is also required. With the consent of the department, students, with an inadequate undergraduate background in economics can be admitted, but they will be required to remedy any deficiencies by taking appropriate undergraduate courses. Graduate Record Examination scores are recommended for the M.A. program and for all foreign students.

Students may elect to work under either of two plans. The respective requirements of these plans are:

Plan IIA — 36 units of course work, 12 units of which may be satisfied by upper division undergraduate courses.

Economics/205A—B, Economics/204A, and Economics/140 are required. Economics/141A—B—C can be substituted for 140.

A comprehensive oral examination in economic theory and *two* elective fields.

Plan IIB — 36 units of course work consisting of all the courses typically taken in the first year of the Ph.D. program.

A comprehensive oral examination in micro-economic theory and quantitative methods, or the elective field substituted for Quantitative Methods.

Plan IIA is designed for students who enter with an M.A. degree specifically in mind. Plan IIB is designed to allow students in the Ph.D. program to acquire an M.A. degree after they have taken an appropriate number of primarily Ph.D. courses and an oral examination.

There is no language requirement for the M.A. degree. A well-prepared student can obtain the M.A. degree in one year.

Urban Economics internship option

The Urban Economics option in the Masters Degree program is unique in its approach to this challenge. It is problem oriented and highly flexible. The working philosophy of the program is to view the urban problem as one of resource allocation. The core of classroom study will be courses in economic decision-making.

PROGRAM SEQUENCE

	FALL	WINTER	SPRING	SUMMER/ FALL	WINTER
Economic Theory	Theory of the firm and Markets	Linear Programming Input-Output	Elective*		Decision Theory or Elective*
Policy Analysis and Implementation	Public Administration or Urban Politics	Public Expenditure and Revenue	Urban Economics		Seminar on Internship Experience
Tools	Statistics	Econometrics	Accounting		Elective*
Emphasis			Elective*		Elective*
Laboratory (Computer Use)	Statistics	Econometrics	Accounting		Preparation of Masters Essay
Internship	Internship				

The second subgroup will deal with the analysis and implementation of public policy. Courses in both economics and political science are included in this set. These courses are designed to acquaint the student with the realities under which decisions are formulated.

The third set deals with tools, such as statistics and accounting, that will be useful to the student in future employment. Additionally the student will be required to participate in a laboratory designed to provide the opportunity to practice newly acquired skills and to learn the techniques of modern computerized data manipulation and computation.

The fourth group of courses will accommodate the individual student's area of particular interest in the urban sector. These will be elective and will relate to such areas as urban and regional economics, environmental economics, economics of human resources relating to education, public health, criminal justics, man-power problems, public finance, public administration, urban politics and appropriate courses in sociology, biology, physics and various areas of specialization in engineering relating to the provision of urban services and the control of the urban environment.

The final requirement for the degree will be a masters project: a report on research, initiated by the student and dealing with a problem relevant to the internship.

Doctor of Philosophy

Requirements

An undergraduate major in economics is not required for admission to the graduate program, but the department does require that specific courses — particularly economic theory — be passed with distinction. At least one quarter of calculus is also required; prospective students, however, are advised to take as much mathematics as possible, particularly calculus and matrix algebra. With the consent of the department, students with an inadequate undergraduate background in economics can be admitted, but they will be required to remedy any deficiences by taking appropriate undergraduate courses. Graduate Record Examination scores in quantitative and verbal aptitude are required for admission to the Ph.D. program.

There are no specific course requirements for the Ph.D. degree.

*Elective courses will be selected by the student to make up and total 12 units per quarter.

Four fields are required of which two are specified: 1) economic theory and 2) quantitative economics. Two additional fields will be selected from a list of electives. With the Department's approval, one elective may be chosen from an outside discipline.

Normally, after two years of course work a student is prepared to take the written General Examinations in economic theory and quantitative economics and the oral examination and the oral qualifying examination.

After passing the General Examinations, the student commences work on the dissertation.

There is no language requirement for the Ph.D. degree. A well-prepared student can obtain the Ph.D. degree in three years.

Candidate in Philosophy (C.Phil.)

Requirements

On advancement to candidacy for the Ph.D. degree (i.e., after having completed the General Examinations, but before completing the dissertation), a student may petition for the award of a C.Phil. degree. This is specifically designated as a non-terminal degree. Eligibility for the C.Phil. degree is limited to a period of seven years following advancement to candidacy for the Ph.D. degree.

A well-prepared student can obtain a C.Phil. degree in two years.

Career opportunities

The undergraduate program in economics provides an excellent academic foundation for careers in both the public and private sectors. Courses in economics are recommended for students interested in both law and journalism. Counseling services are available in the Department Office.

Graduate Training in Economics. The Department recommends that students interested in graduate study in economics either elect the Economics/Mathematics major or take Economics/104A—B, and 105 (economic theory with a mathematical and pure theory emphasis) with electives chosen from the following courses: 102A, 102B, 102C, 141A—B—C, and 143.

Career in Public or Business Administration. It is recommended that students interested in preparation for a career in administration include the following economics courses in their program: 3A—B, 116, 133, 134, 140, 141 141ABC, 143 and 175. Mathematics/12 • Mathematics of Finance is also suggested for business economics students.

Teaching credentials

Students who complete a major in economics may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Consult with designated counselors in the Department of History for any special requirements in this field.

Students interested in a community college instructor's credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence Information

Department of Economics, North Hall, Rm. 3045, University of California, Santa Barbara, California 93106, Phone: 805/961-3670.

Economics

Lower Division courses

1 • Principles of Economics-Micro (4) Crouch
An introduction to micro-economic analysis. Economic theory relating to demand, production, competitive and non-competitive product markets, input markets, and welfare. Applications of micro-economic theory including its use in evaluating and forming public policy. Economics/2 may be taken before Economics11.

2 • Principles of Economics-Macro (4) Staff
An introduction to macro-economic analysis. Analysis of income, employment, and price level. Applications of macroeconomic theory including its use in evaluating and forming public policy.

3A—B • Accounting Concepts (4,4) Staff
Prerequisites: Economics/1 or 109 recommended. Concepts basic to accounting theory and practice as related to the various types of business organization, cost accounting, budgets, and analysis of financial statements.

4 • The Economic Foundations of Human Behavior (4) Crouch
A study of the system of forces which determine human behavior. Discussion of the economic, biological and psychological explanations of human behavior characteristics such as discrimination, hierarchy, competition, cooperation, aggression, acquisitiveness, etc. An interdisciplinary course drawing on source material from economics, as well as the fields of anthropology, biology, ethology and psychology.

5 • Quantitative Statistical Analysis with Economic and Business Applications (4) Staff
Prerequisites: Economics/1 and 2. An introduction to the analysis of economic data, computer programming and use, and elementary statistical methods. Confrontation of economic theories with appropriate data as the vehicle for introducing quantitative methods in problem solving. Two lectures and a two hour seminar section weekly.

6 • Applications of Mathematics in Economics (4) Staff
Prerequisites: Economics/1 and 2. An introductory survey of the application of mathematics in economics. Topics in economic theory are analyzed with the use of mathematical techniques from the calculus.

10FS • Freshman Seminar (3) Staff
A general introduction to economics taught in seminar fashion by members of the department.

Upper Division courses

100A • Microeconomic Theory and Policy (4) Johnson, Frech, Marshall
Prerequisites: Economics/1 and 2 or 109. Economic theory relating to demand, production and competitive product markets with emphasis on applications of theory. **Credit not given for both 100A and 104A.**

100B • Microeconomic Theory and Policy (4) Staff
Prerequisite: Economics/100A. Economic theory relating to non-competitive product markets, input markets, and welfare with emphasis on applications of theory. **Credit not given for both 100B and 104B.**

101 • Static Macroeconomics and Policy (4) Pippenger, Staff
Prerequisites: Economics/1 and 2 or Economics/109. Contemporary analysis of income, employment, and price level and public policy using a static general equilibrium framework with emphasis on applications of theory. Credit not given for both 101 and 105.

102A • Advanced Topics in Microeconomics (4) Staff
Prerequisite: Economics/100B or 104B. Elements of linear programming, input-output analysis and game theory.

102B • Dynamic Macroeconomics (4) Staff
Prerequisites: Economics/101 or 105. Selected topics in short run and long run dynamic economic theory and policy.

102C • Advanced Macroeconomics (4) Staff
Prerequisites: Economics/101 or 105. Selected topics in short run and long run dynamic economic theory and policy.

103 • History of Economic Thought (4) Kennedy
Prerequisites: Economics/1 and 2 or 109. The history of economic thought in relation to its social setting from ancient Greece and Rome to Marxism and Marginalism in the nineteenth century.

104A • Microeconomic Theory (4) Ward
Prerequisites: Economics/1 and 2 or 109, plus Economics/6 or Mathematics/34A and 34B. Economic theory relating to demand, production and competitive product markets with emphasis on pure theory and use of techniques from the calculus. **Credit not given for both 104A and 100A.**

104B • Microeconomic Theory (4) Phillips
Prerequisite: Economics/104A. Economic theory relating to non-competitive product markets, input markets and welfare with emphasis on pure theory and use of techniques from the calculus. **Credit not given for both 104B and 100B.**

105 • Static Macroeconomics (4) Marshall
Prerequisites: Economics/1 and 2 or 109, plus Economics/6 or Mathematics/34A and 34B. Contemporary analysis of income, employment, and price level and public policy using a static general equilibrium framework with emphasis on pure theory and use of techniques from the calculus.

107 • Comparative Economic Systems (4) Staff
Prerequisite: Economics/100B or 104B. Socialism, fascism, and capitalism contrasted with regard to economic decision-making, organization of production, mechanism of exchange, banking and investment, distribution of income, status of labor, international trade and public finance.

108 • Institutional Economics (4) Kennedy
Prerequisites: Economics/1 and 2 or 109. A history of the economic thought of the American institutional school of Veblen, Commons, and Mitchell, and their successors in Heterodox and Radical Economics.

109 • Introduction to Economics (4) Staff
Not open to those who have taken Economics/1 and Economics/2. Economics majors may enroll in Economics/109 only if they have Upper Division standing. Serves as a prerequisite for Upper Division economics courses. Intensive study of economic principles. (Does not count as Upper Division major elective.)

110 • Contemporary Economic Problems (4) Staff
Current social-economic problems will be analyzed, each by a qualified staff member. Topics may include the following: the economics of poverty, discrimination, war, monopoly, the stock market, gold, inflation-deflation, economic growth, and alternative economic systems.

112 • Economic History of Europe (4) Mercer
Prerequisites: Economics+1 and 2 or 109. Survey of the economic development of Europe from the Middle Ages to recent times.

113A • Economic History of the United States to 1900 (4) Mercer
Prerequisites: Economics/1 and 2 or 109. A survey of U.S. economic development from colonial times to the end of the nineteenth century with emphasis on issues related to U.S. economic growth and public policy as it affected both growth and the distribution of income.

113B • Twentieth Century United States Economic History (4) Mercer
Prerequisites: Economics/1 and 2 or 109. A survey of U.S. economic development in the twentieth century with emphasis on issues related to the growth, instability and distribution of income. The impact of public policy on economic growth, instability and income distribution will be an important theme of the course.

114 • Economic Development (4) Staff
Prerequisites: Economics/1 and 2 or 109. Applications of economic theory to the problems of developing nations.

115 • Environmental Economics (4) Quadraccia
Prerequisites: Economics/1 and 2, or Environmental Studies/3 and 4. Economic analysis of environmental decision-making. Determination of the optimum level of pollution. Examination of the concept of externalities, estimation of social versus private costs and benefits, common property resources, welfare theory and production theory applied to problems of pollution.

116 • Industrial Organization and Public Policy (4) Mead
Prerequisites: Economics/100B or 104B. Analysis of competition, monopolistic competition, oligopoly and monopoly theories and practices.

117 • The Soviet Economy (4) Mercer
Prerequisite: Economics/100B or 104B. An analytical and statistical survey of the organization and operating principles of the Soviet economy in the light of geographic and historical backgrounds.

118A—B—C • Legal Analysis for Business (4,4) Barrymore
Prerequisites: 118A is prerequisite for 118B and 118B is prerequisite for 118C. A: The essentials of analysis of the law of contracts and their economic significance. **B**: An examination of the process of legal analysis of business relationships including agency, partnerships, and corporations. Includes study of the nature, formation and extent of agency, partnerships and corporations and comparisons between these various forms of business units and entities. It is recommended that 118A be taken before 118B. **C:** An analysis of the law of bailments; sales, emphasizing the Uniform Commercial Code; and negotiable instruments including checks and promissory notes.

119 • Consumer Economics (4) Staff
A survey of topics in contemporary consumer economics: consumption functions, decision theory, consumer protection, investment in durable goods, effects of advertising, the distribution of income, the financial returns to education, financial planning.

120 • Urban and Regional Economics (4) Winkler, Marshall
Prerequisites: Economics/1 and 2 or 109. Economic analysis applied to current urban and regional problems.

122 • Natural Resource Economics (4) Mead
Prerequisite: Economics/100B or 104B. Microeconomic theory and capital theory applied to problems of conservation and management of natural resources. Analysis of public policy with special emphasis upon energy resources and the energy crisis. Additional topics may include examination of water, fishery, and outdoor recreation resource management.

123 • Urban and Regional Modeling (4) Staff
Prerequisite: Economics/120 or permission of instructor. Contemporary macroeconomic theory is applied as a means of description and analysis for regional economics. Practical applications (modeling) of input-output techniques and multiplier analysis will be studied.

124 • Business Ethics and Social Responsibility (4) Kennedy
Prerequisites: Economics/1 and 2 or 109. Application of ethics to the decisions of economic life; the responsibilities of individuals and economic organizations.

130 • Public Finance (4) Morgan
Prerequisites: Economics/100A and/or 104A and Economics/101 or 105. Fiscal theory and policy. Incidence and effects of taxation, government expenditure programs and benefit cost analysis.

131 • Public Sector Accounting (4) Staff
Prerequisite: Economics/100A or 104A or consent of instructor. Basic accounting techniques applicable to fiscal management of local government with particular emphasis on taxation, budgeting, and debt management.

132A—B • Auditing (4,4) Swenson
Prerequisite: 136B. Standard responibilities, and control of audit engagements; internal control and procedural testing; objectives, reporting, and audit procedures with respect to the balance sheet and operating accounts; concluding the audit engagement, preparation of the audit report, and review of the audit engagement.

133 • Investments (4) Andron
Prerequisites: Economics/1 and 2 or 109. Sources and demand for investment capital, salient characteristics of governmental and corporate securities, operation of security markets, determination of investment policy, and procedures for analysis of securities.

134 • Financial Management (4) Andron
Prerequisite: Economics/100B or 104B. Analysis and management of the flow of funds through an enterprise. Sources and application of funds, types and sources of long term capital. Introduction to the supply of investment funds and the organization of capital markets.

135 • Monetary Economics (4) Staff
Prerequisite: Economics/101 or 105. Survey of monetary theory, the banking system and the supply of money, monetary policy and current issues.

136A—B • Intermediate Accounting (4,4) Swenson
Prerequisite: Economics/3B or permission of instructor. The preparation of the principal accounting statements, recording, valuation, and presentation of cash, temporary investments, receivables, inventories, investments, plant and equipment, intangibles, current obligations, long-term debt, paid-in capital, and retained earnings. Statement analysis. Statement of application of funds.

137A—B • Cost Accounting (4,4) Swenson
Prerequisite: Economics/136B. Concepts and objectives of planning and control; information system and accumulation procedures; planning and control of factory overhead, materials and labor; planning of profits, costs and sales through budgeting; controlling costs and profits through standard costs and gross profit analysis; cost and profit analysis.

138A—B • Tax Accounting (4,4) Swenson
Prerequisite: Economics/3B. Basic concepts of income taxation with respect to income and deduction; areas of special tax procedures pertaining to gains and losses from sales and exchanges, installment sales, depreciation and depletion methods, and losses; preparation of the tax returns for individuals; special tax procedures and preparation of income tax returns for partnerships, estates and trusts and corporations.

139A—B • Advanced Accounting (4,4) Swenson
Prerequisite: Economics/136B. Accounting for partnerships: formation and operation, dissolution and liquidation; special sales accounting procedures; installment sales, consignments, home and branch office; consolidations; and accounting for fiduciaries; receiverships and estates and trusts.

140 • Economic Forecasting, Econometrics and Quantitative Methods (4) Staff
Prerequisites: Economics/1 and 2 and Economics/5 or equivalent. A practical course in the development of economic models, analysis of specific functional forms, and

the application of forecasting and estimation techniques. Emphasis is placed on the student's use of the computer facility as an aid in applying these techniques for the study of social and economic problems.

141A—B—C • Econometrics (4,4,4) Phillips
Prerequisite: Mathematics/34A—B—C or equivalent. The application of quantitative methods in economics. 141A will cover probability and its use in decision theory, distributions and their application to the distribution of income and firms, inference and hypothesis testing and their application in econometric estimation and model construction. 141B will continue with estimation covering the general linear regression model, Bayesian procedures, and applications of nonparametric techniques. 141C will discuss specific problems which arise in the course of estimating economic models, such as, the use of dummy variables, heteroscedasticity, multicollinearity, autocorrelation and an introduction to simultaneous equation estimation.

143 • Mathematical Economics (4) Staff
Prerequisites: Economics/104B and 105. Application of mathematics to selected topics in micro- and macroeconomic theory.

150 • Labor Economics (4) Phillips
Prerequisite: Economics/100B or 104B. The impact of unions on wages, income distribution, employment and prices. The role of government in collective bargaining.

160 • Economics of Crime and Justice (4) Phillips, Votey
Examines social policy to minimize the losses to crime and the costs of crime control. Develops the economics of crime generation, law enforcement, prosecution, corrections and punishment.

165 • The Economics of Poverty (4) Morgan, Winkler
Prerequisite: Economics/1 or 2. Description and analysis of existing and proposed programs to alleviate the impact of poverty with special application to the United States. Programs to be studied include the existing welfare structure, varius negative income tax and family assistance schemes, education, minimum wage legislation, social insurance and commodity subsidies.

167 • Population Economics (4) Ward
An introduction to the study of the causes and effects of population change from the viewpoint of economics. Relevant economic theory will be developed to explain the fertility of families and the marital behavior of individuals. Both historic and contemporary evidence will be examined and interpreted with the models developed. Effects of population change on economic growth and welfare along with various policy prescriptions designed to control population growth will be analyzed.

175 • Government and Business (4) Staff
Prerequisite: Economics/1 or 109. Analysis of alternative public policies for maintaining competitive performance in the economy.

180 • International Trade (4) Votey
Prerequisite: Economics/100B or 104B. Historical and contemporary trade mechanisms; international trade theory; trade and welfare.

181 • International Finance (4) Pippenger, Staff
Prerequisite: Economics/101 or 105. International money and capital markets and their impact on the domestic and world economies; international financial institutions andpolicies.

185 • Economics Research and Policy (4) Morgan
Prerequisites: Economics/100A, 100B & 101, or 104A, 104B & 105. This class is designed for majors who have finished the theory requirements. The class will be taught by 7-10 members of the staff who will discuss the application of economic theory to contemporary research problems and policy issues with which they are concerned. The class will ba taught at an advanced level and will cover topics such as the environment, energy, congestion, water, education, population, crime, and other research topics of interest to the faculty.

192 • Field Research in Economics (4-12) Staff
Prerequisites: Upper Division status, 3.00 overall GPA, approval of project by faculty sponsor and Department Undergraduate Committee. Directed field research on a topic in economics. No more than four units of Economics/192 may be counted toward the requirements for the major in Economics, Business Economics, or Economics-Mathematics.

193 • Senior Accounting Seminar (4) Swenson
Prerequisites: Senior standing and Economics/139B. Advanced topics in accounting theory and practice. Emphasis will be on selected readings from current professional journals and research reports in accounting.

194 • Group Studies (1-4) Staff
Prerequisites: Upper Division standing and admission by special arrangement. Intensive study and research on a topic in economics selected by the student with the guidance and approval of a faculty member. Subject to Departmental approval, students may repeat this course, however, only four units may count toward the major.

196H • Senior Honors Seminar (4) Staff
Prerequisites: Senior standing with 3.0 or better average in the major. Advanced topics in economic theory and policy. Weekly seminar discussions led by various members of the economics faculty.

***199 • Independent Studies in Economics** (1-5) Staff
Admission by special arrangement. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate courses

200A—B—C • Micro-Economic Theory (4,4,4) Frech, Johnson
A: Methodology, theory of consumer behavior and demand, modern utility theory, revealed preference. **B:** Theory of the firm, linear programming and operations analysis, equilibrium under pure competition. **C:** Theory of market types, distribution.

201 • General Equilibrium Theory and Welfare (4) Staff
Survey of general equilibrium and welfare theories, from Walras and Pareto to the present.

202 • Advanced Topics in Economic Theory (1-4) Staff, Mead
Reading and discussion of selected topics and recent literature in current economic theory. Specific material will vary from quarter to quarter. May be repeated for credit.

203A—B • History of Economic Thought (4,4) Kennedy
A: Analysis of the relationships between social conditions, economic theory, and economic policy from the medieval to the classical period. **B:** Analysis of the relationships between social conditions, economic theory, and economic policy from the neo-classical period to the present. Methodological problems including relationships to the sociology of knowledge and general intellectual history.

204A—B • Macro-Economic Theory (4,4) Marshall, Crouch
A: Static macro-economic theory. Classical, Keynesian and post-Keynesian theory of national income and employment. **B:** Dynamic macro-economic theory. Capital theory, models of economic fluctuations, growth, stabilization and inflation.

205A—B • Economic Decisions (4,4) Staff
The course will establish the ideas and techniques of optimally allocating scarce resources. The student will learn the nature of objective functions and constraints in theory and through examples describing rational economic behavior of individuals, firms and public bodies.

207A—B • Comparative Economic Systems (4,4) Staff
A: Criteria for performance of economic systems. Characteristics and problems of command economies. **B:** Problems of decentralization in the command economy; tools of control; market socialism and planning.

212 • Economic History of Europe (4) Mercer
Issues in European economic history.

213 • American Economic History (4) Mercer
Issues in American economic history.

214A—B • Economic Development (4,4) Votey
Comparative economic growth with emphasis on the development of underdeveloped economies.

216A—B • Industrial Organization and Public Policy (4,4) McGuckin, Mead
Advanced topics in industrial organization and public policy.

220A—B • Urban and Regional Economics (4) Marshall, Winkler
A: The theory of city and regional economics. Economic theory when distance is taken as an important determinant of economic activity. **B:** Urban and Regional Policy. The application of theory to policy decisions.

230A—B • Public Finance (4,4) Morgan
A: Public goods, taxation and expenditure theory **B:** Public debt management and fiscal policy.

235A—B • Money and Banking (4,4)
A: Monetary theory. **B:** Analysis of monetary institutions and monetary policies.

240 • Mathematics for Economists I (4) Staff
Selected topics in mathematics of particular importance to economists including the calculus, difference and diffenential equations.

244A—B • Mathematical Economics (4,4) Miller
Mathematical analysis of economic theory.

245A—B • Econometrics (4,4) Phillips
A: Development of the theory of single equation and simultaneous equations estimation. **B:** Econometric studies.

250A—B • Labor Economics (4,4) Phillips
Theoretical and empirical analyses of the structure of wages, the labor market, distributive shares in national income, investment in human resources, national manpower and wage policy and other topics in industrial relations.

260A—B • Natural Resources (4,4) Mead
Capital theory, welfare economics and benefit cost analysis, at theoretical and applied levels, as they relate to resource management and energy production in particular. 260B is a seminar on advanced topics in resource economics; analysis of interactions between economic and natural systems.

280A—B • International Trade (4,4) Marshall, Pippenger
A: International trade theory. **B:** International finance.

* See L-2 198/199 independent studies unit limitations.

594AA—594ZZ • Special Topics in Economics (1-4) Staff
Prerequsites: Graduate standing and consent of instructor.
Special seminar on research subjects of current interest.

595AA—595ZZ • Group Studies in Economics (4) Staff
Prerequisites: Graduate standing and consent of instructor.
Critical reviewof research in selected fields.

596AA—596ZZ • Directed Reading and Research (2-4) Staff
Prerequisites: Graduate standing and consent of instructor.
Individual tutorial.

597 • Individual Study for Master's Comprehensive Examination and Ph.D. Examinations (1-12) Staff
Prerequisites: Graduate standing and consent of instructor.
No unit credit allowed toward advanced degree.

598AA—598ZZ • Master's Thesis Research and Preparation (1-12) Staff
Prerequisites: Graduate standing and consent of instructor.
Only for research underlying the thesis, writing the thesis. No unit credit toward the degree wil be given.

599AA—599ZZ • Dissertation Preparation (1-12) Staff
Prerequisites: Graduate standing and consent of instructor.
Only for preparation of the dissertation.

Education

Professors

Norman J. Boyan, Ed.D., Harvard; educational administration (Dean, Graduate School of Education).
George I. Brown, Ed.D., Harvard; confluent education.
John W. Cotton, Ph.D., Indiana; educational psychology.
Chester W. Harris, Ph.D., Chicago; educational psychology.
Ray E. Hosford, Ph.D., Stanford; counseling psychology.
Laurence Iannaccone, Ed.D., Teachers College, Columbia; educational administration.
Ralph K. Nair, Ed.D., Missouri; counseling psychology.
Kermit A. Seefeld, Ed.D., Stanford; educational foundations.
Stewart B. Shapiro, Ph.D., USC; confluent education.
R. Murray Thomas, Ph.D., Stanford; educational psychology, international education.
John A. R. Wilson, Ed.D., Oregon State; educational psychology and early childhood education
Jules M. Zimmer, Ed.D., Arizona State; counseling psychology.

Associate Professor

Naftaly S. Glasman, Ph.D., Berkeley; educational administration.

Assistant Professors

Donald R. Atkinson, Ph.D., Wisconsin; counseling psychology.
James H. Block, Ph.D., Chicago; educational psychology.
Robert M. Bortnick, Ph.D., Chicago; reading and language arts.
Willis D. Copeland, Ph.D., Notre Dame; social studies education.
Gustavo Gonzalez, Ph.D., Texas; foreign language and bilingual/cross-cultural education.
Mark Phillips, Ed.D., Massachusetts; confluent education.
Donald Winkler, Ph.D., Berkeley; educational administration.

Lecturers and Supervisors

Robert M. Arce, M.A., San Jose State; Supervisor of Teacher Education, Secondary Spanish and Bilingual/Cross-Cultural Education.
Carolyn N. Cogan, M.A., UCSB; Lecturer, Coordinator of Supervised Teaching, Elementary Schools.
Vernon E. Cotter, Ph.D., UCSB; Lecturer, Coordinator of Supervised Teaching, Secondary Schools.
Carol N. Dixon, Ph.D., Delaware; Lecturer, reading and language arts.
Jean Hawthorne, B.A., UCSB; Supervisor of Teacher Education, Secondary Reading.
Richard Jamgochian, Ph.D., Chicago; Lecturer, Head of Teacher Education.
Harleen McAda, Ph.D., Texas; Lecturer, Science Education, Supervisor of Teacher Education, Secondary Science.
Roberta L. Offen, B.S., UCLA; Supervisor of Teacher Education, Secondary Mathematics.
Glenn S. Pate, Ph.D., UCSB; Supervisor of Teacher Education, Secondary Social Studies.
John Romo, M.A., UCSB; Supervisor of Teacher Education, Elementary Schools.
Patricia A. Wallis, B.A., Marian College; Supervisor of Teacher Education, Elementary Schools.

Professors Emeriti

Loretta M. Byers-Sauers, Ed.D., Stanford.
Glen W. Durflinger, Ed.D., Oregon.
Elizabeth H. Irish, Ed.D., Stanford.
Charles L. Jacobs, Ph.D., Columbia.
Edith M. Leonard, M.A., Claremont Colleges.
Elsie A. Pond, M.A., Stanford.
Lester B. Sands, Ed.D., Stanford.
Dorothy D. VanDeman, M.A., Claremont Colleges.

Concerns of the school

See Chapter K.

Master of Arts and Master of Education

The purpose of these degree programs is to add to the competence of experienced elementary-school or secondary-school teachers in academic disciplines as well as pedagogical or research skills.

Admission to the Programs: The candidate must hold a bachelor's degree or its equivalent from an institution of acceptable standing and must satisfy the requirements of the Graduate Division. At the discretion of advisers in the individual sub-programs, a candidate may be required to possess a California Teaching Credential or other Educational-Services Credential or its equivalent prior to entering the program and to have successfully completed two years in teaching or in another appropriate role in professional education before receiving a degree. To seek admission, a candidate obtains application materials from the Graduate School of Education and submits these materials to the Graduate Division.

Characteristics of the Programs: Within a general program candidates must select a specific area of emphasis or concentration. For concentrations in Confluent Education (integration of the affective and cognitive domains of learning) or Counseling Psychology, both the M.A. in Education and the M.Ed. are available. Other concentrations within the M.A. program include Educational Administration, Educational Psychology, Early Childhood Education, Instruction, International Education (with concentration on Indonesia and Malaysia) and Reading. A concentration in Bilingual/Cross-Cultural Education is being developed. Each candidate and adviser or advisers construct a total program acceptable to both parties. Candidates are expected to take a final comprehensive examination at the conclusion of master's degree programs.

There is no blanket foreign language requirement for all candidates. When the candidate's program adviser or advisers deem it suitable for a candidate's field of study, they shall require an appropriate degree of competency in one foreign language. No course credit will be given for the candidate's demonstration of such competency.

At the discretion of the Department of Education, a candidate will be assigned either (1) one adviser in Education, or (2) one adviser in Education and a co-adviser in an appropriate department of another college or professional school on the campus.

Admission is subject to the availability of a program of study in the candidate's subject matter field or fields.

Doctor of Philosophy

Fields of Study: The areas in which candidates can be accepted at present include the following: Early Childhood Education, Educational Psychology, Counseling Psychology, International Education (with concentration on Indonesia and Malaysia), Confluent Education (integration of the affective and cognitive domains of inquiry and learning), and Educational Administration.

In a few cases a potential candidate may wish to direct studies toward a specialization which is not encompassed in one of the fields mentioned above. It may be possible, in such instances, for the School to prepare a special program that would accommodate the individual's particular constellation of interests and at the same time meet the Ph.D. requirement of strong scholarship in an area of emphasis. Potential applicants who believe they fit this category should submit to the Graduate School of Education a clear description of the goals in order to determine whether there is an adviser available who is willing to sponsor the candidate's admission and supervise his program.

Admission to the Program: Students may be admitted for the Fall, Winter and Spring Quarters for all programs. Applications for Fall admission will generally be considered up to and including March 15. Exceptional cases will be considered up to August 1. Applications are obtained from the Graduate School of Education and are submitted to the Graduate Division.

To gain admission, an applicant must fulfill the general requirements for admission to graduate status and must submit a report of performance on at least one of two tests (Miller Analogies or Graduate Record Examination Aptitude Test). In addition, the student is required to present a description of how the proposed doctoral study relates to the individual's background and to plans for the future.

Only applicants whose records suggest clear potential for succeeding in doctoral studies will be accepted into the program.

Characteristics of the Program: The purpose of the program is to prepare highly capable scholar-researchers who will perform as scholars and skilled professionals in their chosen field.

No specific total number of course units which a student must accumulate prior to receiving the doctorate is prescribed.

Residence Requirement: The minimum residence requirement for the Ph.D. degree is two years. Students in doctoral programs will spend at least six quarters in residence pursuing a program of full-time study and research on the Santa Barbara campus; three consecutive quarters of this residence must be completed in regular session before advancement to candidacy. Exceptions to this rule may be granted only by the Graduate Council.

If a student needs skill in one or more foreign languages or in statistics and computer technology in order to pursue a special field of study most effectively, then such requirements will become part of the study program. However, there is no general foreign language or statistics requirement which every candidate must fulfill.

Detailed information regarding these advanced degrees in education is given in the *Graduate School of Education Announcement* and in the *Graduate Division Announcement.*

Credential programs

Credentials for service in public schools in California are issued by the State upon recommendation of institutions authorized for training. The Graduate School of Education provides the professional education courses and directs the student teaching program for all credentials. There are certain acceptable standards which must be met by candidates for teaching credentials, including such qualifications as intelligence, scholarship, aptitude for teaching, physical fitness, and personality. All candidates must be in good standing in the Graduate Division on completion of any credential program.

The Graduate School of Education offers programs leading to recommendation for the following credentials:

- **Multiple Subjects Teaching** Credential (formerly Standard Teaching Credential with a Specialization in Elementary School Teaching)
- **Single Subject Teaching** Credential (formerly Standard Teaching Credential with a Specialization in Secondary School Teaching)
- **Administrative Services** Credential (formerly Standard Supervision Credential)
- **Services Credential** with a Specialization in Pupil Personnel Services authorizing service as a **School Counselor, Child Welfare and Attendance Worker** and as a **School Social Worker** (formerly Standard Designated Services Credential with a Specialization in Pupil Personnel Services)
- **Services Credential** with a Specialization in Pupil Personnel Services authorizing service as a **School Psychologist** (formerly School Psychologist authorization)
- **Instructional Specialist** Credential in **Bilingual/Cross-Cultural Education**
- **Instructional Specialist** Credential in **Early Childhood Education**
- **Instructional Specialist** Credential in **Reading**

For detailed information concerning credential programs and recent changes in credential laws in California, see the *Graduate School of Education Announcement.* For information about the Specialist Credential in **Speech and Hearing Disorders,** consult the Department of Speech in the College of Letters and Science.

Correspondence information

Office of the Dean, Graduate School of Education, Phelps Hall, Rm. 1190
University of California, Santa Barbara, California 93106
Phone: (805) 961-2341 or (805) 961-2238.

Office of Student Teaching and Credential Advisement, Phelps Hall, Rm. 1180
Graduate School of Education, University of California,
Santa Barbara, California 93106
Phone: (805) 961-2036, (805) 961-2013, (805) 961-2104.

Department of Education, Phelps Hall Rm. 2206
University of California Santa Barbara, California 93106.
Phone: (805) 961-2343 or (805) 961-2502.

Education

Upper Division Courses

114 • Introductory educational statistics (4) Cotton, Harris
Prerequisite: College algebra or consent of instructor. Measures of central tendency and variability. Sets, sample spaces, and random variables. Introduction to estimation theory and hypothesis testing. Binomial, normal, t, and chi-square distributions. Bivariate normal distribution.

164 • Educational and vocational guidance (3) Nair
Prerequisite: Consent of instructor. Examination of vocational development theory, the sociology of work, and school programs focused upon individual decision making. Participation in relevant community surveys.

*199 • **Independent studies** (1-5) Staff
Prerequisite: Open only to advanced students approved by the chairman of the department. Study of special problems in various fields of education; 199 courses are limited to no more than five units in one quarter and no more than 15 units total.

Graduate Courses

200 • Research methods in education (3) Staff
Prerequisites: Education/114, graduate standing and consent of instructor. Basic principles of scientific method exemplified by experimental, survey, longitudinal and correlational studies; design and reporting of original investigations; bibliographic experience.

203 • Social foundations of education (4) Phillips, Seefeld
This survey provides both an historical and comparative perspective on contemporary social and philosophical issues as they relate to educational decision making.

205 • Comparative education (3) Thomas
Analyses of the role of education in developing nations; a study of educational problems and attempted solutions in societies of Asia, Africa, Central and South America, and the Pacific Islands.

209A • Learning abilities of young children (4) Wilson
Prerequisite: Consent of instructor. Based on readings in Piaget, Kendler and Kendler, Guilford, Wilson and Robeck, and the analysis of assumptions implicit in children's toys such as creative playthings. Seminar and research-oriented field work.

209B • Theories of child development (4) Thomas
Analyses of characteristics of various theories of child development, their underlying assumptions, and research evidence that bears upon the theories' likely validity.

210 • Theories of learning (3) Wilson
Prerequisites: Graduate standing, Education/212 or equivalent and consent of instructor. Analysis and critical study of theories and models of human learning, review and evaluation of current literature on the learning process, and examination of the concept of the teaching-learning process.

211 • Psychological foundations of education in elementary school (3) Thomas
Prerequisites: Graduate standing and consent of the instructor. Interdisciplinary approaches to theory and research on student behavior.

212 • Psychological foundations of education (5) Block, Cotton, Wilson
Prerequisite: Psychology/1 or 101. A study of the nature and dynamics of human behavior. Emphasis is placed upon the application of psychological principles to the educative process, personality development and assessment.

213 • Diagnosing learning difficulties (4) Thomas
Prerequisite: Admission to Master of Arts in Education or Master of Education Program. Factors which may cause learning difficulties are analyzed, methods of evaluating these factors in the classroom and clinic are described, and solutions for the difficulties are proposed.

214A • Advanced educational statistics (4) Harris
Prerequisite: Education/114. This course will deal with the following topics: review of interval estimation and hypothesis testing; one-way fixed analysis of variance; two-way fixed effects analysis of variance; principles of fixed-effect design; bivariate distributions, simple correlation, and simple regression; and binomial distributions.

214B • Advanced educational statistics (4) Harris
Prerequisite: Education/214A. This course will deal with the following topics: random and mixed anova designs, repeated measures anova designs, nonparametric procedures, analysis of covariance (in relation to randomized block designs), and multiple regression and correlation.

215 • Curriculum theory and dynamics (4) McAda
Prerequisite: Admission to Master of Arts in Education Program or Administrative Service Credential Program. Curriculum theory and research are applied to the analysis of classroom teaching. Particular emphasis is placed on recent studies of the structure of subject matter, advances in educational media, and research and clinical reports on interpersonal functioning in the classroom.

217 • Gestalt learning theory (5) Brown
Prerequisite: Graduate standing and consent of instructor. The theory and principles of Gestalt Therapy as applied to an educational context. Experiential participation in a training experience.

218A—B • Factor analysis (4,4) Harris
Methods of component and factor analysis as applied to test batteries, demographic variables, etc. Theory and contributions of Hotelling, Spearman, Thurstone, Guttman, Lawley, Rao, Joreskog, and others. Problems of communality estimation, number of factors, and rotations will be considered.

219 • The evaluation of student learning I (4) Block
Prerequisite: Graduate standing and consent of instructor. An introduction to the theory of student evaluation and the construction of summative, norm-referenced achievement tests.

220 • The Evaluation of student learning II (4) Block
Prerequisite: Education/219 and consent of instructor. An excursion into contemporary test theory. Topics: formative placement and diagnostic evaluation. Criterion-referenced testing; the problem of setting performance standards; the development of integrated student evaluation systems.

225 • Social foundations of education in elementary school (3) Seefeld
Prerequisites: Graduate standing and consent of instructor. Interdisciplinary approaches to theory and research on the school as a social institution.

226A—B—C • Early childhood learning laboratory (3-3-3) Wilson
Prerequisite: Admission to Early Childhood Program or consent of instructor. Diagnose and prescribe learning needs of children in areas of problem solving, decision making and responsibility. Demonstrate ability to use knowledge of socio cultural backgrounds of young children in planning learning environments.

227 • Research methods in child development (4) Thomas
Prerequisite: Education/114 or equivalent. Survey and critique of methods of studying children. Includes the completion of a short research project by each class member.

228A—B—C • Early childhood learning fieldwork (3-3-3) Wilson
Prerequisite: Admission to Early Childhood Program or consent of instructor. Develop organizational and management procedures to facilitate growth and learning. Develop criteria for working with volunteers, tutors, parents and paraprofessional staff members. Foster constructive interactions among teaching staff and parents from diverse cultures.

230 • Developmental and remedial reading (3) Bortnick, Dixon
Prerequisite: Consent of instructor. A course for the classroom teacher and the specialized reading teacher, emphasizing practical, innovative techniques in the reading program.

231A—B—C—D • Developmental and remedial reading laboratory (1-4) Bortnick, Cogan, Dixon
Prerequisite: Admission to the M.A. in Reading or consent of instructor. An advanced course in developmental and remedial reading. A practical laboratory experience. Students will learn to implement instructional programs with remedial and developmental reading students.

232 • Clinical, diagnostic and developmental reading (3) Bortnick, Dixon
Prerequisite: Teaching experience and consent of instructor. An advanced course in reading intended for the person organizing and implementing developmental and remedial programs in the schools.

233 • Procedures and materials for reading in secondary school (3) Bortnick, Dixon
Prerequisite: Graduate standing. The application of research and theory to classroom practice in the teaching of reading for teachers in the content fields at the secondary level.

234 • Linguistics for teachers of reading and English (3) Bortnick, Dixon
Prerequisite: Graduate standing and consent of instructor.

*See L-2 for 198/199 independent studies unit limitations

Linguistic theory and its applications to the teaching of reading and English.

238 • Children's literature (4) Bortnick, Dixon
Prerequisite: Consent of instructor. Topics include the development of tastes and interests, values and attitudes; standards for the creating of children's literature; bibliotherapy — the problems approach; individualized reading — balancing the diet; interrelationships with total curriculum; experimenting with children's literature.

239 • School law (3) Staff
Prerequisite: Consent of instructor. The history of school law including significant cases will be reviewed along with a study of the Education, Administrative, Welfare and Institution, and other relevant Codes. Opinions of the Courts, Attorney General and County Counsel will also be studied.

240A • The administrator and educational purpose (3) Boyan, Iannaccone
Prerequisite: Consent of instructor. A systematic consideration of relations between educational purposing and processes of educational decision making. Special emphasis is placed on value-judgmental and factual bases of decision making in education. (Not offered in 1975-76)

240B • The administrator and educational purpose (3) Staff
Prerequisite: Consent of instructor. A systematic consideration of educational alternatives, examined in relation to educational purpose.

241A • Schools — public institutions (3) Iannaccone
Prerequisite: Consent of instructor. Educational governance and politics are explored as well as legal and extra legal controls exerted upon schools as public institutions.

241B • Schools — public institutions (3) Iannaccone
Prerequisite: Education/241A and consent of instructor. A systematic examination of governance and politics of education in local, state, national, and international contexts. Emphasis is placed on various processes and mechanisms of politicization of educational governance.

242A • Schools — complex organizations (3) Boyan, Iannaccone
Prerequisite: Consent of instructor. Organizational theories are explored and their implication to the structure of schools is analyzed. Consideration is given to organizational variables such as climate, authority, leadership, change. (Not offered 1976-77)

242B • Schools — complex organizations (4) Boyan
Prerequisite: Consent of instructor. This seminar will focus on ways of dealing wth organizational characteristics that hinder the initiation, implementation, and adoption of change within educational settings.

243 • The principalship (3) Jamgochian
Prerequisite: Graduate standing and consent of instructor. The role of the school principal is examined in theoretical and practical contexts. Consideration is given to other administrative positions as well.

244 • Organizations and interpersonal relationships (3) Shapiro
Prerequisite: Consent of instructor. A study of leader behavior in a school context. Social interaction and authority relationships are explored.

245A • School finance (3) Staff
Prerequisite: Consent of instructor. An introduction to the financing of education at the school, district, county, state, and federal levels. Emphasis will be given to the economic foundations of school financing.

245B • Introduction to economics of education (3) Winkler
Prerequisite: Consent of instructor. An analysis of the literature related to economics of education.

245C • Resource allocation in education (3) Winkler
Prerequisite: Education/245B. Application of micro economic theories and econometrics to resource allocation in education.

246A • Introduction to evaluation of school programs and personnel (3) Glasman
Prerequisite: Consent of instructor. Educational evaluation is examined as an executive function. Emphasis is on practices, models and studies of program and personnel evaluation and the integration of educational evaluation within the context of educational decision making. (Not offered in 1975-76.)

246B • Advanced evaluation of school programs and personnel (3) Glasman
Prerequisite: Education/246A and consent of instructor. Theories and practices of program and personnel evaluation are explored including the use of research methodology in evaluation and the construction of evaluation instruments. Emphasis is placed on program characteristics and personnel behavior and characteristics and on their possible correlations with student achievement. Evaluation results are viewed as inputs for administrative decision making. (Not offered in 1975-76.)

247A • Seminar in problems of administration (3) Boyan, Iannaccone
Prerequisite: Consent of instructor. Current specific problems relating to the administration of school programs are selected for analysis through the application of theory and research in organizational behavior.

247B • Introduction to educational planning (3) Staff
Prerequisite: Consent of instructor. An analysis of the literature of educational planning with consideration of large metropolitan, state, national, and international dimensions.

247C • Advanced educational planning (3) Staff
Prerequisite: Education/247B and consent of instructor. Consideration and use of pertinent planning tools in and for educational systems and sub-systems. Emphasis will be given to systems analysis, operations research, PPBS, PERT, and CPM.

249 • Practicum—educational administration (1-6) Jamgochian
Prerequisite: Consent of instructor. Field experience, discussions with school administrators and simulated activities will be utilized to maximize understanding of the "work world" of school administrators. May be repeated up to a total of 9 units.

251 • Introduction to self-science education (2-4) Phillips
Prerequisite: Consent of instructor. Experiential learning opportunities and the presentation of theoretical models are combined to help students acquire the tools, skills, and methodologies of the self-scientist. Specific emphasis is placed on classroom applications.

252 • Classroom interaction (3) McAda
Prerequisite: Consent of instructor. Study of current research and theory related to verbal and non-verbal teacher-student interactions in classroom settings. Use of observation instruments to measure the impact of teacher behavior on student behavior. Guided practice using selected interaction techniques: asking questions, changing wait-time and reward schedules, and other techniques related to success with new curriculum materials.

253 • Design of instruction (4) Copeland
Prerequisite: Consent of instructor. An examination of (a) analytical models for the study of instruction, (b) major research findings on school learning, (c) representative instructional strategies and tactics and (d) skills for designing instructional systems.

254 • Supervision of instruction (4) Copeland
Prerequisite: Consent of instructor. An investigation of (a) the development of and major points of view concerning supervision, (b) the variable impinging upon the work of the supervisor including both structural/organizational and human/interpersonal, (c) strategies and skills for effective practice of instuctional supervision.

255 • Social context of instruction (4) Block
Prerequisite: Education/212 or equivalent, Education/203. This course focuses on how the school as an institution shapes the interactions of students and teachers in the classroom. Special attention will be paid to schools as formal organizations and to the roles of teachers and students within such formal organizations.

257A—B—C • Practicum in design of instruction (1,1,1) Copeland
Prerequisite: Enrollment in M.A. in Education, instruction emphasis, program; access to an instructional setting; consent of instructor. Guided experience in the development and evaluation of Instructional Sequences which will be the basis of the Master's Thesis. May be repeated.

258A • Seminar in curriculum: Reading (3) Bortnick, Dixon
Prerequisites: Basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of instructor. Recent developments, review and evaluation of current research in curriculum.

258B • Seminar in curriculum: Math (3) Cotter
Prerequisite: Basic procedures course in area of specialization; a minimum of one year of teaching experience; consent of instructor. Recent developments, review and evaluation of current research in the mathematics curriculum.

258C • Seminar in curriculum: Language Arts (3) Bortnick, Dixon
Prerequisite: Basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of instructor. Recent developments, review and evaluation of current research in the language arts curriculum.

258D • Seminar in curriculum: Science (3) McAda
Prerequisite: Basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of instructor. Evaluation of current research in science education; theories and trends in the teaching of science.

258E • Seminar in curriculum: Social Studies (3) Copeland
Prerequisites: Basic procedures course in social studies; a minimum of one year of teaching experience; consent of instructor. Recent trends, issues and problems in the teaching of social studies. Review and evaluation of research in this area. Students will select an emphasis in either the elementary or secondary school level.

260 • Seminar: The creative process (4) Brown
Prerequisite: Graduate standing and consent of instructor. A discussion of the research on and theories of creativity. Emphasis will be on psychological process rather than on creative productivity. Major foci will be on descriptive studies of the creative person and contributions to the methodology of creative growth.

261A • Encounter group leadership (4) Shapiro *Prerequisite: Consent of instructor.* An introduction to training leaders in theory and practice of facilitating small face-to-face groups. Course will cover goals and purposes of encounter groups, T-Groups, sensitivity training, etc. with emphasis on skill in group process.

261B • The dynamics of planned change (4) Shapiro *Prerequisite: Consent of instructor.* Examination of role of change agents to various client systems with exploration of theories of social change, providing theoretical framework from which to understand systemic problems of individuals and groups. Development of skills of consultants to various social systems.

261C • Human relations in education (4) Shapiro *Prerequisite: Consent of instructor.* Application of technology of change agentry, group dynamics and encounter groups or T-Groups to educational systems. Survey of educational institutions and study of human relations procedures available for improvement. Development of "design" capacities in planning human relations programs.

262A • Systematic training in counseling strategies: Observing and recording behavior (1) Zimmer *Prerequisite: Admission to the Counseling Psychology Program.* Laboratory course designed to help individuals learn to observe and record data pertaining to individual and group as well as institutional patterns which affect behavior of the individual. Student performance must meet specified levels of competency to pass the course.

262B • Systematic training in counseling strategies: Interpreting behavior (1) Atkinson *Prerequisite: Admission to the Counseling Psychology Program.* This laboratory course is designed to help students learn to interpret data gained through observations which allow them to put causal relationships into perspective. Student performance must meet specified levels of competency to pass the course.

262C • Systematic training in counseling strategies: Modifying behavior (1) Hosford *Prerequisite: Admission to the Counseling Psychology Program.* This laboratory course is designed to help students develop and employ strategies that allow them to change some aspect of the individual, group or institution in a manner that directly results in modification of the individual.

262D • Systematic training in counseling strategies: Evaluating behavior change (1) Atkinson, Hosford, Zimmer *Prerequisite: Admission to the Counseling Psychology Program.* This laboratory course is designed to help students develop and test feedback and research strategies to determine the effectiveness of various modification strategies employed in the counseling process. Student performance must meet specified levels of competency to pass the course.

263A—B • Counseling techniques: Behavior modification (3,3) Atkinson, Hosford *Prerequisite: Consent of instructor or admission to the Counseling Psychology Program.* Course is designed to help counselors and teachers gain understanding and practice in using behavioral counseling techniques. Instruction covers historical development, present status of behavior modification, and specific techniques (operant procedures, desensitization, behavior rehearsal, social modeling, assertive training) for modifying behavior.

264 • Counseling techniques: Eclectic (3) Atkinson *Prerequisite: Consent of instructor or admission to the Counseling Psychology Program.* Students are given an opportunity to become acquainted with various counseling techniques and their potential effects on counselees. Through systematic exposure to techniques, students will develop an integrated style of counseling that relates to counselees' goals and history of maturation.

265 • Fieldwork in counseling and concurrent seminar (3) Atkinson, Hosford, Zimmer *Prerequisite: Consent of instructor and enrollment in the Counseling Psychology Program.* Intensive supervised fieldwork in counseling. A minimum of one full day in an approved practicum setting plus individual and group supervision at the University are required.

266A—B—C • Psychological testing in education (3,3,3) Hosford, Zimmer *Prerequisite: Admission to Counseling Psychology Program.* An intensive study of human development and personality dynamics in terms of their assessment through clinical instruments and techniques. Students will learn to choose, administer, and utilize data from techniques commonly used by school psychologists and college counseling centers. (Yearlong, weekly classes and practicum, plus supervised application in the fieldwork setting.)

267 • Group dynamics and their applications in education (3) Shapiro *Prerequisite: Consent of instructor.* Participation in a training group followed by an examination of school applications for group procedures.

268 • Advanced fieldwork in counseling (3) Atkinson, Hosford, Zimmer *Prerequisite: Consent of instructor and nine units of Education/265 Fieldwork in Counseling and Concurrent Seminar.* Advanced supervised fieldwork in counseling. A minimum of one full day in an approved practicum setting plus individual and group supervision at the University are required.

269A • Marriage and family counseling (3) Atkinson, Hosford *Prerequisite: Consent of instructor.* The purpose of this course is to examine the interaction patterns of distressed families, study in detail the psychoanalytic, behavioral, and communicative-interactive approaches to family counseling, and expose students to a variety of family counseling techniques.

269B • Fieldwork in family counseling (3) Atkinson, Hosford, Zimmer *Prerequisite: Consent of instructor and enrollment in the Counseling Psychology Program, must have completed three quarters of Education/265.* The purpose of this course is to provide an intensive supervised fieldwork in marriage and family counseling. A minimum of one full day in an approved marriage and family practicum setting will be required.

270A—B • Seminar in bilingual/cross-cultural education: A — Concept/theory, B — Methods and materials (3,3) Arce, Gonzalez *Prerequisite: Admission to the Bilingual/Cross-Cultural Specialist Program or consent of instructor.* This course will include the presentation, discussion, and development of general concepts and theories in bilingual/cross-cultural education and the presentation and development of effective teaching methods and materials in bilingual/cross-cultural education of children.

270C • Seminar in bilingual/cross-cultural education: C — Teaching strategies (3) Gonzalez *Prerequisite: Education/270A—B or consent of instructor.* This course will examine instructional processes in a systematic manner, stressing a diagnostic, prescriptive approach. Students study the learning needs of bilingual children and attempt to match teaching strategies to identified needs. It will emphasize application of bilingual theory into practice.

270D • Seminar in bilingual/cross-cultural education: D — Concepts and theories (3) Gonzalez *Prerequisite: Admission to the Bilingual/Cross-Cultural Specialist Credential Program.* Designed to develop a theoretical foundation in bilingual/cross-cultural education. Emphasis on: (a) history of bilingual/cross-cultural education, (b) rationale for bilingual/cross-cultural education, (c) goals and objectives of bilingual/cross-cultural education in the U.S., (d) typologies of bilingual/cross-cultural education, (e) legislation regarding bilingual/cross-cultural education, (f) learning theories and bilingualism.

275 • Counseling theories: Seminar (3) Atkinson, Hosford, Zimmer *Prerequisite: Consent of instructor and enrollment in Master's Program (Counseling Psychology). A critical examination of modern theories of counseling, plus intensive supervision of counseling practice.*

276 • Research in counseling practices: Seminar (2) Zimmer *Prerequisite: Consent of instructor and enrollment in Master's Program (Counseling Psychology).* Examination of problems in various counseling applications, recent theoretical developments. Continuation of group and individual supervision.

277 • Specialized counseling: Seminar (2) Atkinson, Hosford, Zimmer *Prerequisite: Consent of instructor and/or enrollment in Ph.D. (Counseling Psychology) Program.* An examination of the diverse contexts in which counseling practices are relevant, plus their effects upon theory and techniques. Continuation of supervision.

282 • Instructional strategies in confluent education (4) Brown, Phillips *Prerequisite: Education/217, 260, and 261A.* The development of pedagogical structures based on the behavioral sciences and laboratory experiences in prerequisite course work directed toward individual and group learning experience in the classroom.

283 • Curriculum design in confluent education (4) Brown, Phillips, Shapiro *Prerequisite: Education/217, 260, 261A, and 282.* Systematic study of curriculum design, the structure of disciplines, potential affective components and their relationship to intellectual functioning within an idiosyncratic as well as nomothetic context. Directed toward the application of confluent principles of education to classroom and departmental curricula.

284 • Philosophical dimensions of confluent instruction (4) Phillips, Shapiro *Prerequisite: Enrollment in M.A. in Education (Confluent Program) and consent of instructor.* Consideration of values, ethics, definitions of reality to help student clarify and refine his philosophical framework for teaching, as well as understand underlying philosophical principles for education in general. Attention given to special problems of confluent curriculum and teaching methodology.

285A • Community college — professional preparation (3) Seefeld *Prerequisite: Students in advanced degree programs who plan to teach in two-year community colleges.* Development, governance and purposes of the community college: a survey of administration, control, financing, curriculum, faculty and students.

285B • Community college — professional (1-2) Staff
Prerequisite: Consent of instructor; enrollment in or completion of Education/285A. Students will be assigned intern teaching and other responsibilities at the Santa Barbara City College.

286 • Visual media in the confluent curriculum (3) Phillips
Prerequisite: Consent of the instructor. An examination of varied uses of visual media in the classroom. Emphasis is on classroom environmental enrichment and facilitation of learning through the integration of films with the traditional disciplines. Attention is given to the affective domain and student film-making.

288A • Principles of confluent education (3) Brown
It will be the purpose of this course to introduce the philosophy and theory of Confluent Education to credential students who will design lessons and units of instruction incorporating principles of confluent education.

288B • Issues in confluent education (3) Brown
Survey of key problems and trends in Confluent Education. Strategies for introducing Confluent Education into educational systems, personal and intellectual criteria for selection of confluent educators. Research and assessment procedures and future of confluent and other humanistically-oriented approaches.

289 • Practicum in confluent education (1-6) Staff
Prerequisite: Admission to M.A., M.Ed. or Ph.D. in Confluent Education. Supervised practice in applications of techniques, methods, and curricula of Confluent Education in public schools, private schools, higher education, community education and other educational programs or systems.

290A—B—C • Procedures, curriculum, instructional materials in early childhood education programs (3,3,3) Wilson
Prerequisite: Consent of instructor; admission to Early Childhood Specialist Credential program. Systematic consideration and application of the theoretical and conceptual foundations pertinent to the development of curriculum and instruction for young learners.

295A—B—C—D—E—F • Seminar in educational psychology (4,4,4,4,4,4) Block, Cotton, Harris, Thomas, Wilson
Prerequisite: Admission to Ph.D. Program. A. Affective Processes, B. Developmental Processes, C. Cognitive Learning, D. Measurement and Mathematical Models of Education, E. Structure of Intellect, F. Psychological Base for Modern Instructional Procedures. Sections A—F are given as separate units and may be taken more than once by a student with the consent of the instructor.

Professional preparation in teaching (300-393 Series)
These courses are designed for the professional sequence in approved credential programs. They provide theory related to field practice in teaching, and cover the design of instruction, teaching strategies, development of instructional materials and the psychology of learning. The student teaching experience provides the opportunity for application of university course work to be applied in practice. Courses in the 392 series have as a prerequisite admission to a teaching credential program at UCSB. The Education/392 series courses coincide with the calendar of the public schools.

R 390 • Procedures, curriculum, and instructional materials used in teaching reading (1-2) Dixon
Prerequisite: Admission to the Single Subject Credential program. Application of research and theory to procedures in the teaching of reading through problem solving situations, inductive reasoning and discovery, adapting insruction to individual reading needs.

SF 390 • Curriculum, instructional procedures and materials used in teaching French (3) Gonzalez
Prerequisite: Required background in French. Required of candidates for the Single Subject Credential in French.

SM 390 • Curriculum instructional procedures and materials used in teaching math in secondary schools (3) Cotter
Prerequisite: Required background in Mathematics. Designed for teachers in training.

SN 390 • Curriculum, instructional procedures and materials used in teaching Spanish (3) Gonzalez
Prerequisite: Required background in Spanish. Methodology of foreign language teaching with particular application to Spanish.

SS 390 • Curriculum, instructional procedures and materials used in teaching social studies (3) Copeland
Prerequisite: Graduate standing. Required background in anthropology, economics, history, political science, sociology, geography, psychology, or combination social sciences. This course is required of candidates for the Single Subject Credential in one of the named social sciences.

SST 390 • Procedures for teaching science in secondary schools (3) McAda
Prerequisite: Required background in physical or life sciences. Lecture-discussion sessions considering secondary school science curriculum materials and the objectives and teaching strategies appropriate to these materials.

EL 391A • Teaching procedures, curriculum, and instructional materials used in teaching mathematics in elementary schools (3) Cotter
Prerequisite: Graduate standing and enrollment in the Multiple Subjects Credential program. The application of research and theory to classroom practice in the teaching of mathematics.

EL 391B • Teaching procedures, curriculum, and instructional materials used in teaching science in elementary schools (3) McAda
Prerequisite: Graduate standing and enrollment in the Multiple Subjects Credential program. The application of research and theory to classroom practice in the teaching of science.

EL 391C • Teaching procedures, curriculum, and instructional materials used in teaching social studies in elementary schools (3) Copeland
Prerequisite: Graduate standing and enrollment in the Multiple Subjects Credential program. The application of research and theory to classroom practice in the teaching of social studies.

EL 391D • Procedures, curriculum, and instructional materials used in teaching reading and language arts in elementary schools (3) Bortnick, Cogan
Prerequisite: Graduate standing and enrollment in the Multiple Subjects Credential program. Application of research and theory to classroom practice in the teaching of reading and language arts through problem solving situations, inductive reasoning and discovery, adapting instruction to individual reading needs.

EL 392 • Supervised teaching: Elementary schools (3-12) Staff
Prerequisite: Admission to the Multiple Subjects Credential program. Supervised teaching.

I 392A—B—C—D • Supervised internship teaching (4,4,4,4) Staff
Prerequisite: Admission to a teacher internship program in the Graduate School of Education. Internship teaching under joint supervision of the University and public school personnel.

S 392 • Student teaching: Secondary education (3-6) Staff
Prerequisite: Admission to the Single Subject Credential program and consent of instructor. Supervised teaching at the secondary level.

SF 392 • Student teaching: French (3-6) Staff
Prerequisite: Admission to the Single Subject Credential program and consent of instructor. Supervised teaching at the secondary level in French.

SM 392 • Student teaching: Mathematics (3-6) Offen
Prerequisite: Admission to the Single Subject Credential program in mathematics. Supervised teaching at the secondary level in mathematics.

SN 392 • Student teaching: Spanish (3-6) Arce
Prerequisite: Admission to the Single Subject Credential program in Spanish. Supervised teaching at the secondary level in Spanish.

SS 392 • Student teaching: Social studies (3-6) Pate
Prerequisite: Admission to the Single Subject Credential program in social studies. Supervised teaching at the secondary level in social studies.

SST 392 • Student teaching: Science education (3-6) McAda
Prerequisite: Admission to the Single Subject Credential program in science. Supervised teaching at the secondary level in science.

Problems (393 Series)
Education/393 to be required at the option of the instructor who teaches the concurrent 392 course.

EL 393 • Seminar in student teaching: Elementary (1) Staff
Prerequisite: Graduate standing. Concurrent enrollment in Education EL/392. Problems of teaching identified during field experience in student teaching.

S 393 • Problems seminar in teaching in secondary schools (1) Staff
Prerequisite: Taken concurrently with supervised teaching in designated subject fields. Discussion of problems in designated subject fields.

SF 393 • Problems seminar in teaching French (1) Metz
Prerequisite: Taken concurrently with supervised teaching in French. Discussion of problems in the teaching of French.

SM 393 • Problems seminar in teaching mathematics (1) Offen
Prerequisite: Taken concurrently with supervised teaching in mathematics. Discussion of problems in the teaching of mathematics.

SN 393 • Problems seminar in teaching Spanish (1) Arce
Prerequisite: Taken concurrently with supervised teaching in Spanish. Discussion of problems in the teaching of Spanish.

SS 393 • Problems seminar in teaching social studies (1) Pate
Prerequisite: Taken concurrently with supervised teaching in social studies. Discussion of problems in the teaching of social studies.

SST 393 • Problems seminar in teaching science (1) McAda
Prerequisite: Taken concurrently with supervised teaching in science. Discussion of problems in the teaching of science.

Advanced study and research courses (594-599 Series)

The 594—599 series of courses are for advanced study and/or research. Letter designations appearing after the course number refer to the area of specialty as follows:

CE Confluent Education
CP Counseling Psychology
EP Educational Psychology
EX Executive Program
IE International Education
LA Reading and Language Arts
ME Mathematics Education

594 • Special topics (1-4) Staff
Prerequisite: Consent of instructor. Special seminar on research subjects of current interest in doctoral and master's degree subprograms.

594/CE • Special topics (1-4) Brown, Phillips, Shapiro
Prerequisite: Consent of instructor. May be repeated for maximum of eight units. Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594/CP • Special topics (1-4) Atkinson, Hosford, Zimmer
Prerequisite: Enrollment in the counseling program and consent of instructor. Special seminar will deal with an investigation of contemporary issues and problems in the field of counseling topics such as successful and unsuccessful intervention procedures used in counseling clients with drug problems.

594/EP • Special topics (1-4) Staff
Prerequisite: Consent of instructor. May be repeated for maximum of eight units. Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594/EX • Special topics (1-4) Boyan, Glasman, Iannaccone, Jamgochian, Winkler
Prerequisite: Consent of instructor. Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594/IE • Special topics (1-4) Thomas
Prerequisite: Consent of instructor. May be repeated for maximum of eight units. Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594/IN • Special topics in instruction (3) Copeland
Prerequisite: Consent of instructor. An exploration of special topics in instruction, especially relating to the theoretical basis and practical skills needed to evaluate instructional sequences in terms of desired pupil performance.

595 • Group studies (4) Staff
Prerequisite: Consent of instructor. Critical review of research in doctoral and master's degree sub-program special fields.

596 • Directed reading and research (2-4) Staff
Prerequisite: Consent of instructor. Individual tutorial in doctoral and master's degree subprogram special fields.

596/CE • Directed reading and research (2-4) Brown, Phillips, Shapiro
Prerequisite: Consent of instructor. May be repeated for maximum of six units by master's degree students and for maximum of eight units by doctoral degree students. Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential candidates by petition.

596/CP • Directed reading and research (2-6) Atkinson, Hosford, Zimmer
Prerequisite: Graduate standing, enrollment in the counseling program, and consent of instructor. Independent research and/or reading in counseling in areas not covered by courses offered.

596/EP • Directed reading and research (2-4) Block, Cotton, Harris, Thomas, Wilson
Prerequisite: Consent of instructor. May be repeated for maximum of six units by master's degree students and for maximum of 36 units by doctoral degree students. Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential candidates by petition.

596/EX • Directed reading and research (2-4) Boyan, Glasman, Iannaccone, Jamgochian, Winkler
Prerequisite: consent of instructor. Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential students by petition.

596/LA • Directed reading and research in reading and language arts (2-4) Bortnick, Dixon
Prerequisite: Consent of instructor. Individual tutorial in directed reading and the review of pertinent research on special topics in relation to elementary reading and/or language arts.

597 • Individual study for comprehensive examinations (2-12) Staff
Prerequisite: Consent of instructor. Preparation for master's or Ph.D. comprehensive examinations.

597/CE • Individual study for comprehensive examinations (2-12) Brown, Phillips, Shapiro
Prerequisite: Consent of instructor. Preparation for master's or Ph.D. comprehensive examinations in confluent education.

597/CP • Individual study for comprehensive examinations (2-12) Atkinson, Hosford, Shapiro, Zimmer
Prerequisite: Completion of 24 graduate units in the counseling program for master's students; completion of 36 graduate units in the counseling program for Ph.D. students. Preparation for master's degree comprehensives or doctoral examinations. Contracts to be worked out with student's major professor.

597/EP • Individual study for comprehensive examinations (2-12) Block, Cotton, Harris, Thomas, Wilson
Prerequisite: Consent of instructor. Preparation for master's or Ph.D. comprehensive examinations in educational psychology.

597/EX • Individual study for comprehensive examinations (2-12) Boyan, Glasman, Iannaccone, Winkler
Prerequisite: Admission to Educational Executive Doctoral Program. Preparation for master's or Ph.D. comprehensive examination in Educational Executive Program.

598 • Master's thesis research and preparation (2-12) Staff
Prerequisite: Consent of instructor. Supervised research and writing of the thesis in master's degree sub-programs.

598/EP • Master's thesis research and preparation (2-12) Block, Cotton, Harris, Thomas, Wilson
Prerequisite: Consent of instructor. Supervised research and writing of the thesis in master's degree for educational psychology.

599 • Ph.D. dissertation preparation (2-12) Staff
Prerequisite: Consent of instructor. Supervised research and writing of dissertation in doctoral degree sub-programs.

599/CE • Ph.D. dissertation preparation (2-12) Brown, Phillips, Shapiro
Prerequisite: Consent of instructor. Writing of dissertation in doctoral degree program in confluent education.

599/CP • Ph.D. dissertation preparation (2-12) Atkinson, Hosford, Zimmer
Prerequisite: Completion of doctoral qualifying exams. Writing the dissertation for doctoral degree in Counseling Psychology Program.

599/EP • Ph.D. dissertation preparation (2-12) Block, Cotton, Harris, Thomas, Wilson
Prerequisite: Consent of Instructor. Writing of dissertation for doctoral degree program in educational psychology.

599/EX • Ph.D. dissertation preparation (2-12) Boyan, Glasman, Iannaccone, Winkler
Prerequisite: Consent of instructor. Writing of dissertation for doctoral degree in Educational Executive Program.

Education Abroad Program

William H. Allaway, Director.
Gloria Blakemore, Associate Director.
Jose R. Fulco, Associate Director.
James D. Kline, Associate Director.
Birger A. Pearson, Associate Director.
Hallam C. Shorrock, Jr., Associate Director.

UCSB Coordinator's Office

Adil M. Yaqub, Campus Coordinator.
Brian W. Selander, Academic Counselor.

Study Center Staff, 1975-76

————————, Liaison Officer — Academic Affairs, Beirut Study Center.
John Traugott, Ph.D., Director, Bordeaux Study Center.
Blake Spahr, Ph.D., Director, Goettingen Study Center.
Val D. Rust, Ph.D., Associate Director, Goettingen Study Center.
Norman Ravitch, Ph.D., Director, Grenoble Study Center and related programs.
Bruce Larkin, Ph.D., Director, Hong King Study Center.
————————, Associate Director, Hong Kong Study Center.
Murray Baumgarten, Ph.D., Director, Jerusalem Study Center.
Donald S. Rothchild, Ph.D., Liaison Officer, Legon-Accra Study Center.
Richard Herr, Ph.D., Director, Madrid Study Center.
Julian Palley, Ph.D., Director, Mexico City Study Center.
Jack London, Ph.D., Liaison Officer, Nairobi Study Center.
Dennis McElrath, Ph.D., Director, Padua Study Center.
John Traugott, Ph.D., Director, Paris Study Center.
James Bosson, Ph.D., Director, Scandinavian Study Center (Bergen, Lund).
David M. Messick, Ph.D., Associate Director, Scandinavian Study Center (Bergen).
George D. Bedell, Ph.D., Director, Mitaka-Tokyo Study Center.
Edwin M. Eigner, Ph.D., Director, United Kingdom and Ireland Study Center.
Arthur McGuinness, Ph.D., Associate Director, United Kingdom and Ireland Study Center.

Concerns of the Program

Administered for the University of California by the Santa Barbara campus, the Education Abroad Program is now entering its fifteenth year of operation. Study Programs have been established in Brazil, France, Germany, Ghana, Hong Kong, Israel, Italy, Japan, Kenya, Lebanon, Mexico, Norway, Spain, Sweden, United Kingdom and Ireland, and the USSR. All programs are for a single academic year, except for Hong Kong where certain qualified students enter the program as seniors and remain for one additional year of graduate study. In the USSR the program is for four months.

Purpose

The Education Aboard Program was originally designed to give mature, highly motivated and academically superior upper division students from all UC campuses rich experience in a new cultural milieu as a part of their normal undergraduate program. Somewhat later, a graduate dimension was added which has now made a significant contribution in assisting a small number of selected students in their programs toward advanced degrees.

The Program stimulates the intellectual development of the participants, broadening the general education of all and giving a new depth to the particular academic interests of some. Most gain fluency in a language other than their own, and all grow in their ability to engage in independent study. Perhaps most valuable of all are increased self-understanding, clarified life purposes and a broadening and deepening of personal values.

One of the most distinctive features of the Program is the emphasis placed on the full integration of the UC students into the life of the host university. For the most part, UC students abroad live as do the students of the host university, attend the same classes, take courses from the same professors and take part in local social and cultural activities. As an aid in facilitating UC student adjustment to unfamiliar educational practices, tutorials are included within the curriculum of most of the Study Centers, supplementing the regular academic offerings of the host university.

The academic program

The academic program of each student includes: (1) a preparatory course in the language of the country (except for the Hong Kong, Lebanon, Africa, and United Kingdom and Ireland programs); (2) with few exceptions a full academic year of credit courses; and (3) a wide-ranging opportunity to audit courses, either in the student's special field of interest or in new fields, which the student may wish to explore.

In order to assist students to adjust to different academic requirements of the host university and to provide a link to American university practices, many courses taken by UC students are supplemented by tutorials. The tutorials are conducted by graduate students or junior staff of the host university, who help UC students to resolve language difficulties, provide cultural background presupposed by the lectures, give opportunities for questioning and discussion and supplement the lectures by reading assignments, papers and evaluation of progress.

Each student is concurrently enrolled on a home campus of the University of California and at the host university. Full academic credit is received for courses satisfactorily completed. The selection of courses is such that, by advance planning and wise choice, most students can make normal progress toward graduation. Some students fulfill some general education requirements.

Academic planning and advising

A participant who wishes to make normal progress toward graduation should counsel *in advance* with the departmental adviser assigned to the student and the dean of that school or college in order to ascertain how participation will affect the student's academic program. In the following pages, entries are provided for each of the Study Centers, listing the major departments of study. Individual courses presently approved for UC credit are not listed here but may be consulted in the *EAP Advisers' Manual* in the EAP Campus Coordinator's office (1233 South Hall) and in EAP departmental advisers' offices. Since offerings at the host universities may change rapidly, the listings in the Manual represent some of the courses UC students have taken in the past. Many of the same or similar courses will be available in future years, but the student should plan a program that is sufficiently flexible to allow the taking of alternate courses. Each year new courses are added to a Center's approved offerings as needed by UC students attending and as available at the host university. Although courses approved by the University of California carry full credit, each department retains the right to determine the extent to which it will accept units so earned in the fulfillment of the requirements for its own majors.

Normally, students apply for admission to the Program during the Fall Quarter of their sophomore year. However, a limited number of students are accepted each year to participate as seniors and as graduate students. Such a student should make inquiry of the dean of the college as well as of the academic advisers concerning residence requirements in order to learn in what way participation will affect graduation or graduate status.

In order to facilitate the academic work of the students, University of California professors serve as Directors and Associate Directors of most Study Centers. They work with their counterparts in the host university in developing the academic program and advise students on any problem pertaining to their work. In addition, the Directors are responsible for all aspects of student welfare and conduct.

Selection

Participants are chosen on each campus by a faculty committee appointed by the Chancellor. Basic requirements are: Upper Division standing in the University at time of participation, two years of university-level work in the language of the country with a B average (with some exceptions) and an over-all B average. In addition to academic criteria for selection, the faculty committee attaches much importance to indications of the student's seriousness of purpose, maturity and the capacity to adapt to the experience of study abroad. As part of the screening process, students are required to consult with their adviser and to obtain clearance from the University's Student Health Service.

With the exception of students from California community colleges, transfer students are eligible if they have completed at least one quarter in the University of California at the time of selection. California community college students may apply for the Education Abroad Program prior to their active enrollment in a campus of the University of California, but only under certain conditions. Such students, considered during their sophomore year, must compete with UC students on the campus on which application for admission is being processed. If selected for EAP, a community college transfer student must have been clearly admitted to a UC campus prior to departure for the Program.

Student conduct and parental approval

It is anticipated that the students selected for the Education Abroad Program will be of high caliber, committed to profiting from both the intellectual and social aspects of the experience. Since they will be guests in another country and another university, their conduct will reflect on both the University of California and the United States. Students participating in the Education Abroad Program are responsible to the Director of the Center, to the Director of the EAP, to the faculty of the University of California, and to the faculty members of the host university who are related to the Program. The Director of the EAP reserves the right to terminate the participation in the Program of any student whose conduct (in either academic or non-academic matters), after careful consideration and full review, is judged to be contrary to the standards and regulations of the host university.

Participation in the Program by a minor student must be approved by the parents or guardian. In approving such participation, parents and guardians should be aware that a greater degree of personal freedom is inherent in the foreign university and that the University of California cannot take responsibility for supervising closely the activities of individual students. The Directors of the Centers will be available to students with problems and will maintain close contact with the student group as a whole. The University provides for comprehensive medical and hospitalization coverage for all participants.

Cost and Financial Aid

The Regents endeavor to bring the Program within the reach of all students, regardless of their financial resources. In most instances, participants may take their University scholarships with them. The NDSL and Regents' loan fund are also available. Costs range between $3140.00 and $4775.00 for the year programs (including tuition, room and board, round-trip transportation, books, health and accident insurance, some travel and about $100.00 per month for personal expenses). Prospective participants who require financial assistance should consel early with the Dean of Financial Aids.

Other arrangements

The Education Abroad Program arranges transportation to the various Study Centers and will assist in finding inexpensive transportation back to the United States at a time and by a means of the student's choosing. In most Study Centers a variety of housing facilities is available, including residence halls and private dwellings.

Application forms for admission to the Program are available in the EAP office and are given to students following a discussion of various aspects of the Program with the EAP Academic Counselor. Deadline dates for filing applications are firm requirements, and for some Programs occur very early in the academic year. Information on deadlines and related matters such as course offerings, selection, orientation, withdrawal from the Program after selection, schedules of departures, payment of fees, etc., may be obtained from the EAP Academic Counselor or Coordinator at 1233 South Hall.

Brazil

University of Sao Paulo

The University of California program at the University of Sao Paulo in Brazil is offered in cooperation with Indiana University. The curriculum emphasizes the study of Brazilian literature and Portuguese language but offerings are also available in the Arts, Humanities and Social Sciences. Students with appropriate background may enroll in independent study projects. UC students are considered auditors by the University of Sao Paulo, but receive grades for each course, given by the Director of the Indiana Program, a faculty member of that university.

The Brazil program begins in late January with an intensive language program in Portuguese and concludes the following December. Preference in selection of UC students is given to those with two full years (or the equivalent) of university Portuguese or with one year of Spanish and one year of Portuguese. However, admission to the Brazil program will also be considered for highly motivated students without previous training in Portuguese, but who have completed two years of university Spanish combined with a five week intensive language course in Portuguese.

France

The University of California study programs in France currently provide opportunities for enrollment in six host universities. Several of these programs are specialized and are structured to meet well defined academic needs. UC students making application for France may indicate their preference of host universities within this group, but final assignment is made on the basis of suitable course offerings. The programs are administered through UC faculty and staff in residence in Bordeaux, Grenoble and Paris.

A compulsory, intensive language course precedes the beginning of the Fall semester. All courses are taught in French. Customarily tutorials accompany those courses in which more than eight to ten UC students enroll.

University of Bordeaux: Major emphasis in the broad areas of the humanities and social sciences. Courses available in recent years have included offerings in Art History, Economics, French, Geography, History, Philosophy, Political Science, Psychology, Sociology, Spanish and Zoology. The Institute of Political Science at Bordeaux is especially well known. Science courses are designed for majors only. Students wishing to enroll in Science and Mathematics courses must, in an interview, receive the permission of the instructor. Laboratory space is limited. All foreign language courses are literature courses. Some courses that fulfill general education requirements in the humanities are available.

University of Grenoble: Major emphasis in courses available through the Universite des Sciences Sociales (Grenoble II) with limited openings available in the humanities and physical sciences.

University of Montpellier: Major emphasis in literature and the humanities. Course arrangements are made primarily through Paul Valery University of Montpellier, a special division of the University of Montpellier III.

University of Paris: Major emphasis in film and theater but with opportunities for graduate students in other appropriate fields including work toward the California Teaching Credential in French. The film program includes: (1) courses especially designed for the Paris Center, (2) courses offered in the film department in the University of Paris III and (3) seminars given at the Ecole Pratique des Hautes Etudes and other film departments in Paris. Film courses are structured not toward production but to integrate the study of film to the Humanities and to emphasize its relationships with the arts. Theater courses are taught at the Institut des Etudes Theatrales with a curriculum emphasis on the literary and historical problems of the theater.

University of Pau (Pau-Paris): Major emphasis in French Civilization. The program permits qualified undergraduates to experience an academic year in France sequentially in a provincial and metropolitan environment. The program involves intensive language courses in French at the University of Pau (September 4 to October 15), followed by continuation through the fall quarter (October 15 to January 24) at Pau, where courses are planned in regional aspects of French Civilization together with standard offerings in History, Geography, Art, Linguistics and Literature. For winter and spring quarters (February 2 to June 30) students are enrolled at the Institut des Professeurs de Francais a l'Etranger of the University of Paris III in a combination of special courses in French Civilization and regular University of Paris courses.

University of Poitiers: Major emphasis in history and medieval studies with related courses in literature and social sciences available.

Germany

George August University at Goettingen

A compulsory intensive language course precedes the beginning of the Fall semester at the George August University in Goettingen. All courses are taught in German. Tutorials supplement courses in which more than five UC students are enrolled. Almost all majors can find courses in their fields, but space for laboratory courses in Biology and Psychology is severely limited. Science majors may be restricted to theory courses.

Departments in which UC students have studied profitably in the past are: Anthropology (cultural and physical), Art, Biological Sciences, Chemistry, Economics, German, History, Linguistics, Mathematics, Modern Languages (French, Spanish, Scandinavian, Slavic Languages), Music, Philosophy, Physics, Political Science, Psychology, Religious Studies and Sociology. Courses that fulfill general education requirements in the humanities are available.

Ghana

University of Ghana

The University of Ghana at Legon-Accra admits a limited number of graduate and undergraduate University of California students. Selection is made on the basis of scholarship, field of specialization, motivation and ability to adapt to an African environment. Study at the University of Ghana is on the British system; hence students are expected to restrict their course work to their major or area of specialization while in Africa. Course programs are continued through the academic year; thus a study program set up within one discipline during the first term must be continued throughout the three terms the student is enrolled. Courses may be selected from offerings in Anthropology, Archaeology, African Area Studies, Arabic, Biochemistry, Botany, Chemistry, Economics, English, African Geography, Geology, African History, Mathematics, African Music, Philosophy, Physics, Political Science, Psychology, Sociology, Religions, Zoology.

Hong Kong

Chinese University of Hong Kong

Annually a limited selection of courses is offered in English by the Chinese University of Hong Kong. University of California students have previously studied with profit in the following departments: Art (studio courses, for Mandarin-speakers), Chinese (i.e., Cantonese,

Kenya

University of Nairobi

The University of Nairobi admits a limited number of graduate and undergraduate University of California students. Selection is made on the basis of scholarship, field of study, motivation and ability to adapt to an African environment. Study at the University of Nairobi is on the British system; hence students are expected to restrict their course work to their major or area of specialization while in Africa. Course programs are continued through the academic year; thus a study program set up within one discipline during the first term must be continued throughout the three terms the student is enrolled. Examinations are given once, at the end of the academic year (in June) and are mandatory for receiving credit.

Graduates and undergraduates may select courses from offerings in History, English and African Literature, Linguistics, Political Science and Sociology. Graduate students in History, Political Science, Architecture, Design and Sociology can pursue independent studies in connection with the Institute for Developmental Studies, Institute of African Studies and the Housing and Research Development Unit. Excellent opportunities for research are also available in Veterinary Science.

Lebanon

American University of Beirut

The American University of Beirut, EAP host university in Lebanon, is organized primarily along the lines of an American institution. Classes are small and tutorials are not provided. All courses, with the exception of those involving Arabic language and literature, are taught in English. A knowledge of Arabic is not required but all students not already fluent will be required to take a brief course in conversational Arabic during the orientation program. By reason of its location, AUB offers excellent opportunities for taking courses concerned with Middle East problems.

The AUB Faculty of Arts and Sciences grants Bachelors degrees in the following subjects: Arabic (language or literature), Archaeology, Art (studio), Biology, Business Administration, Chemistry, Comparative Literature (Arabic, English, French, German), Economics, Education, English (linguistics or literature), Geology, History (European, Middle Eastern, or Ancient), Mathematics, Philosophy, Physics, Political Science, Public Administration, Religious Studies, Sociology (includes Cultural Anthropology), Statistics. The Faculty of Agriculture grants B.S. degrees in General Agriculture, Agricultural Economics and Rural Sociology, Animal Production and Protection, Crop Production and Protection, Food Technology and Nutrition, and Soils and Irrigation.

The Center may be of particular value to graduate students specializing in one of the following fields: Agriculture of Developing Countries, Arabic Language and Literature, Archaeology, Marine Biology, Comparative Education, Teaching of English as a Foreign Language, Development Administration, Linguistic Analysis, Middle East Area Studies (contemporary or historical), Nutrition, Religious Studies, and Tropical Health.

Mexico

The National Autonomous University of Mexico (UNAM)

The curriculum in Mexico includes considerable emphasis on the study of Spanish at several levels and also emphasizes specialized work in a credential program for future teachers of Spanish. UC students enroll in courses offered by the School for Foreign Students (Escuela de Cursos Temporales), and when qualified have access to the full range of curricular offerings of the University. Courses for foreign students are offered through three terms: Spring and Fall semesters and a Summer Session. Classes in the School for Foreign Students are usually small. Language groups are limited to a maximum of 20 students. The following fields of study are offered in the School for Foreign Students: Latin American Art, Literature and History; Mexican and Meso-American Studies, and Spanish Language and Literature.

Norway

University of Bergen

An intensive course in Norwegian (mid-June to mid-August) precedes the beginning of the academic year at Bergen. For the first several weeks of the intensive language program, students live in Oslo, followed by language study in rural Norway. Intensive language study is continued into the Fall semester at Bergen. University courses are taught in Norwegian, and although tutorials are not usual in the Norwegian system, they can be arranged for those with language difficulties. Norwegian students study one subject within a definite program; therefore, American students are advised to concentrate on one field of study — usually their major or a closely allied discipline.

Courses are offered in the following fields: Anthropology, Art History, Biology, Botany, Chemistry, Economics and Business Administration, Geography, Geology, Geophysics, History, Mathematics, Norwegian, Oceanography, Philosophy, Physics, Psychology, Religious Studies, and Sociology.

Spain

A compulsory intensive course in Spanish at the University of Madrid and at Santander precedes the Fall semester at the Universities of Barcelona and Madrid, the two universities which comprise the UC program in Spain. All instruction at both institutions is in Spanish. Students submit a single application for Spain but may indicate a preference as to place of study. Final assignment is based upon the available curriculum, the student's academic program and personal preference. The program for UC students at both universities is supervised by a UC faculty member at Madrid, assisted by a UC faculty or staff member at Barcelona.

University of Barcelona: Established as an outreach of the Madrid program, the Barcelona program permits a limited number of qualified UC students to spend the academic year in an environment somewhat removed from the more intense pace of life in the capital and offering specialized, regional cultural opportunities. The program, which is offered in cooperation with the University of Illinois, provides the means of becoming familiar with the Catalan culture, its language and literature, while pursuing standard courses in Spanish. In the past, students have benefited through enrollment in Cultural Anthropology, Spanish Art, History of Spanish Institutions, Spanish Music, Latin American Literature, Spanish Literature to 1600, 20th Century Spanish Literature, Spanish Phonetics, Cervantes, and the Picaresque Novel.

Mandarin), Economics (especially Development Economics and History of Economic Thought), English (some basic courses, including Drama, offered by British or American staff members), History, Philosophy and Sociology.

Mandarin is taught under contract at the Yale-in-China Chinese Language Centre. Undergraduates who have already completed 18 units of Chinese language study may elect up to nine units per term of advanced Chinese. All other undergraduates are required to include 18 units of Chinese in their annual programs or a number sufficient to raise their overall total to 18 units. Students normally take no more than nine units of Chinese in any term.

Since there is substantial annual variation in the number and distribution of courses offered in English, and information about them becomes known only one week before instruction begins, there can be no assurance that specific courses will be available.

Advanced graduate students may occasionally arrange for independent study courses under a professor of the host university. A new dimension in the Hong Kong program may be of special interest to seniors and graduate students planning to qualify for graduate degrees in Chinese studies and related fields. This plan permits certain advanced students to enter the program during their senior year and through prior arrangement with their UC campus to remain for an additional year of graduate work under the personal supervision of a UC graduate adviser at the Study Center. The program involves intensive language training, combined with courses and seminars at the Chinese University of Hong Kong. The curriculum is designed for the student seeking the M.A., and anticipating further graduate work, after returning, in Asian Studies or some field selected and approved.

Three teaching assistantships are available to advanced graduate students through a grant from the U.S. Department of State.

Israel

UC students studying in Israel are enrolled at the University of Haifa or at The Hebrew University of Jerusalem. A single application is filed for the program with the student indicating preference for the host university. Final determination of assignment is based upon available course offerings, the student's academic program along with personal concerns. First priority for the admission to the program in Israel is given to students who have completed at least one year of Hebrew. For students not fluent in Hebrew a compulsory language course in Haifa or Jerusalem precedes enrollment. Students must pass a proficiency examination to be exempt from further study of the language during the year. UC students at both universities are under the supervision of a UC faculty member in Jerusalem.

University of Haifa: Special attention given to contemporary Israel as reflected in the Social Sciences and Arab-Jewish studies. Strong emphasis on the kibbutz movement. UC students enroll in a special one year program for foreign students, but when qualified, have access to a broad curriculum throughout the full university. Basic courses include offerings in Judaism and Zionism; Israel: History and Politics; Israel and the Middle East; Israel: Society and Social Planning; Communal and Cooperative Movements. Field work and independent studies also available.

The Hebrew University of Jerusalem: A wide variety of courses available in the field of Jewish Studies, offered in English in the School for Overseas Students. Qualified students take courses throughout the university in the Humanities, Social Sciences and Sciences. However, laboratory space is limited and departmental permission is required to take science courses.

In the past, students have profitably studied in the following departments: Archaeology, Art History, Biological Sciences, Chemistry, Classics, Economics, Education, Geography, Hebraic Studies, History (emphasis on History of Jewry, Israel and Middle East), Islamic Civilization, Linguistics, Mathematics, Philosophy, Political Science, Psychology, Religious Studies, Romance Languages, Russian Studies, Semitic Languages and Sociology.

Italy

University of Padua

For most students selected for Padua, an intensive compulsory course in language and contemporary Italian history at the University of Padua from early September to mid-October precedes the opening of the academic year. All instruction is in Italian and tutorials accompany courses in which several UC students are enrolled. Students work in "study groups" of four to 10 students, each group directed by a Study Center docent. At present there are three fields: History of Art (including Archeology), Italian Literature (including Linguistics) and Political Science (which includes History, the Social Sciences, Geography and Demography, as well as Political Science in the American sense). These core courses have three parts which must be taken concurrently: A: a basic University of Padua course; B: center seminar under UP docent; C: independent research for variable units. Students well prepared in Italian may take an optional additional course, outside the study group, chosen from the UC approved courses of the University of Padua in such fields as Economics, Philosophy, Psychology and Religion. Courses fulfilling general education requirements are available in the Humanities and Social Sciences.

Students who have completed only one year of Italian at the university level are also eligible for the program at Padua but, if selected, must participate in a special summer intensive language program at the University of Perugia.

Japan

International Christian University

The International Christian University, located in Mitaka, a suburb of Tokyo, is organized primarily along the lines of an American institution. Tutorials are not offered, but independent study with individual faculty members is available. Before enrolling, students must have completed one year of Japanese at the university level or its equivalent. During their year of study students are expected to complete an additional 18 units of work in Japanese language. Excellent opportunities exist for students interested in the Japanese language and in problems of the Orient, but a limited knowledge of Japanese may restrict students to courses offered in English. The number of courses taught in English usually changes from year to year since such courses depend on foreign visiting faculty, or permanent I.C.U. faculty (Japanese and foreign) who can teach in English.

Students have profitably studied in the following fields: Japanese Archaeology, Japanese Art, Economics of the Far East, English Literature, History of the Far East, Japanese Language and Literature, Oriental Philosophy, Physics, Political Science, Religious Studies, Sociology of Japan.

University of Madrid: A core program, organized for the UC Study Center and other American programs, consists of courses in the following fields: Art History, History of Spain and Spanish America, Spanish Folk Music, Political Science (with special reference to Spain and Latin America), Sociology, Spanish and Spanish American Literature and Linguistics. Since these courses are designed for American students, there is no need for tutorials.

In addition to the core program students can enroll, with the permission of the Director and the appropriate Faculty, in regular courses of the University of Madrid. In the past, students have done so in Anthropology (cultural), Economics, History, Linguistics, and Social Psychology.

Sweden

University of Lund

Students who are not already fluent in Swedish will study the language in an intensive summer course. This study is continued into the Fall semester for all students at the Center at appropriate levels until the student has gained the equivalent of two years of language study. Because of the time demands of the Fall intensive course, the beginning student should not count on taking many courses in an academic discipline during the Fall. While proficiency in Swedish is being increased, a small number of University courses may be available in English. Normally, students are enrolled in courses taught in Swedish during both the fall and spring semesters. Under the Swedish system, a student studies one major. Tutorials can be arranged when needed.

Courses are offered in the following fields: Anthropology, Architecture, Art History, Biochemistry, Biology, Botany, Chemistry, City and Regional Planning, Conservation and Pollution, Drama and Film History, Economics, Engineering, Folklore, Geography, Geology, History, Law, Linguistics, Mathematics, Music, Philosophy, Physics, Political Science, Psychology, Religious Studies, Scandinavian Studies, Sociology and Zoology.

United Kingdom and Ireland

The University of California Education Abroad Program currently includes nine institutions in England, Scotland and Ireland. Additional universities may be included for the 1976-77 year. The highly competitive nature of the program together with the individual attention given to placement makes early application advisable. Students may indicate a preference for the host university but final assignment is made in the Study Center and is based on the student's academic field and available courses.

The number of University of California students admitted to each university depends on the spaces available in any given department. Once accepted into a university department in an area of specialization, the student is expected to pursue studies in that department only. in general, students may not take courses in other departments or colleges. Tutorials are an integral part of any course of study and constitute the greater part of a student's load at Sussex. The following enumeration of fields of study at individual universities gives an indication in which departments students have been enrolled in the past. In coming years, depending on availability of spaces and on the applicants' needs, other fields may be added.

University of Birmingham: African Languages & Studies, Biological Sciences, Chemistry, Economics, English, Geography, History, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology.

University of Dublin, Trinity College: Art History, Economics, English, History, Mathematics, Philosophy, Psychology. Trinity encourages some students to follow a program in General Studies, that is, general courses in the humanities.

University of Edinburgh: Anthropology, Art (studio: Edinburgh College of Art; history: University of Edinburgh), Biological Sciences, Chemistry, Economics, English, History, Linguistics, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology. Students wishing to study in the Department of Music must take qualifying examinations before enrolling. Examinations are given after arrival in Edinburgh in mid-September.

University of Kent: Humanities, Natural Sciences and Social Sciences.

University of Leeds: site of a new program, offers a wide variety of studies in the Humanities, Social Sciences, and Sciences. There are also departments of Agriculture, Engineering, and Management Studies.

University of Reading: Agriculture, Horticulture, Humanities, Natural Sciences, Social Sciences.

University of St. Andrews: Biological Sciences, English, History, Mathematics, Philosophy, Physics, Religious Studies. Courses in elementary language instruction for non-language majors are available.

University of Stirling: English, History, Philosophy, Psychology. Students are free to take courses outside their field of specialization.

University of Sussex: Art History, Biological Sciences, Chemistry, English, History, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology.

USSR

Leningrad State University

The program at Leningrad State University is cooperative and involves a number of other American universities with arrangements coordinated through the Council on International Educational Exchange (CIEE). Selection is highly competitive and is conducted on a national basis through written examination, interviews in Russian and prepared statements of purpose. Three years of Russian at the university level are a firm requirement. Enrollment is for four months in either a Spring or Fall semester. The program is designed primarily for language majors but is also open to students of literature, history, area studies and other disciplines. The curriculum is limited to Russian language and civilization.

Engineering

Faculty

J. G. Skalnik, D. Eng., Professor of Electrical Engineering, Dean, College of Engineering.

Lower Division courses

Engineering/1 • Concepts of Technology (3) Staff
A nonmethematical survey of those aspects of technology which are particularly relevant to an understanding of the modern manmade society. The course is specifically designed for non-engineering majors.

Engineering/3A—B • Computer Solutions of Engineering and Science Problems (2,2) Staff
Prerequisites: Mathematics/3A—B, concurrently. Applications of computers to engineering and scientific problems. FORTRAN language programming, elements of numerical analysis, including introduction to error sources, recursion, numerical calculus, root finding, etc. Students will use the computer.

Available to students in engineering, science and mathematics.

Chemical and Nuclear Engineering

Professors

Henri J. Fenech, Sc.D., MIT; nuclear engineering.
Owen T. Hanna, Ph.D., Purdue; chemical engineering.
John E. Myers, Ph.D., Michigan; chemical engineering.
A. Edward Profio, Ph.D., MIT; nuclear engineering (Vice-Chairman).
Robert G. Rinker, Ph.D., Caltech.; chemical engineering (Chairman).

Associate Professors

Duncan A. Mellichamp, Ph.D., Purdue; chemical engineering.
Orville C. Sandall, Ph.D., Berkeley; chemical engineering.

Assistant Professors

[1] [2]*G. Robert Odette,* Ph.D., MIT; nuclear engineering.

Lecturers

Richard B. Jones, Ph.D., Virginia State; nuclear engineering.
Peter N. Snowdon, Ph.D., Cambridge; chemical engineering.

Concerns of the department

The Department prepares students for professional careers in chemical engineering or in nuclear engineering. At the undergraduate level, emphasis is placed on a thorough background in the quantitative fundamentals of science and engineering. This background is strongly reinforced by laboratory courses in which the student becomes familiar with the application of theory. At the graduate level, the student is further required to demonstrate competence in conducting basic and applied research. Degrees offered in chemical engineering include the B.S., M.S., and Ph.D.; and in nuclear engineering, they include the B.S. and M.S. degrees.

The basic areas of teaching in chemical engineering include thermodynamics, mass transfer, heat transfer, fluid mechanics, chemical kinetics, process dynamics and control, and theoretical methods. In nuclear engineering they include nuclear and energy transport, nuclear systems, nuclear radiations, materials science, and theoretical methods. Students are prepared to solve significant real engineering problems which can be related to environment, energy conservation, ecology and new technology. Faculty research interests include nucleate boiling phenomena, real-time digital control, mathematical modelling in transport and reaction engineering, homogeneous and heterogeneous catalysis, chemical reactor stability and dynamics, heat and mass transfer in non-mewtonian fluids, gas absorption with chemical reaction, neutron radiography, nuclear radiation effects on materials, tritium recovery in lithium-blanketed fusion reactors, neutron activation analysis for trace pollutants, heat and momentum transport in nuclear reactors.

Bachelor of Science — Chemical Engineering

Preparation for the major

In preparing a program in chemical engineering a student should plan to meet the requirements in General Education common to all the engineering curricula (described under the heading "College of Engineering"), and should take the following courses:

67 Lower Division units are required: Engineering/3A—B; ChE/10; Chemistry/1A—B—C; 1AL—BL—CL; EE/6A—B; Mathematics/3A—B—C; 5A—B—C; ME/10; Physics/7A—B—C.

Upper Division major

62 Upper Division units are required: ChE/110A—B; 120A—B—C; 128; 130A; 140A—B; 150A—B; 180A—B; 182; Chemistry/113B—C;

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[1] Absent on Leave Fall 1975
[2] Absent on Leave Winter 1976

130A—B—C; NucE/115.

The requirements for admission as a freshman in the College of Engineering are listed earlier in this catalogue. Transfer students who have completed most of the Lower Division courses listed above and are entering the junior year of the chemical engineering program may take ChE/10 in the fall quarter concurrently with ChE/120A. No entrance examination is required.

Cooperative Program — Chemical Engineering and Chemistry: Chemical engineering students with a strong interest in chemistry are advised to consider a five-year program leading to B.S. degrees in both chemical engineering and chemistry. Students may obtain details of the program from the Department of Chemical and Nuclear Engineering or the Department of Chemistry. Students are advised to consider applying for simultaneous registration in the Colleges of Engineering and Letters & Science in order to complete B.S. programs in both Engineering and Chemistry.

Other double majors can be arranged on an individual basis in areas such as chemical engineering and biological sciences.

Bachelor of Science — Nuclear Engineering

Preparation for the major

The undergraduate curriculum in nuclear engineering provides an education in all the basic areas of nuclear engineering. In addition to meeting the requirements in General Education common to all the engineering curricula, the student should take the following courses:

66 Lower Division units are required: Engr/3A—B; NucE/10; Chemistry/1A—B—C; 7A—B—C; Physics/8BL—CL.

Upper Division major

66 Upper Division units are required: NucE/111; 112; 115; 116; 121; 125; 130A—B; 140A—B; 150; ChE/120A—B; 130A—B; Physics/115A—B; 124; and 6 units of nuclear engineering electives.

The requirements for admission to the program as a freshman are those of the College of Engineering. Transfer students who have completed the majority of the Lower Divsion courses listed above will be accepted in the program as juniors. There is no entrance examination.

Graduate programs

Graduate programs are offered in chemical engineering leading to the degrees of Master of Science and Doctor of Philosophy in chemical engineering and Master of Science in Nuclear engineering. Although the Ph.D. degree is not yet offered in nuclear engineering, students may elect to take a substantial portion of their course work in the nuclear field and to do their doctoral dissertation under the direction of the nuclear engineering faculty.

Master of Science in Chemical Engineering

Requirements

Acceptance for admission to the Master of Science program is subject to the admission requirements of the Graduate Division. It is expected that most applicants will have obtained undergraduate degrees in chemical engineering. However, students with degrees in other branches of engineering or in science will be accepted with the provision that they take such undergraduate courses as prescribed by the department as prerequisites for an acceptable graduate course program in chemical engineering.

Knowledge of a foreign language will not be required for the M.S. degree in chemical engineering.

It is expected that most students will follow Plan I, although students with special backgrounds or requirements will be permitted, at the option of the Department, to follow Plan II. The details of these plans are as follows:

Plan I — Thirty units of course credit will be required of which approximately fifty per cent must be chosen from 200-level courses in chemical engineering. The remaining credits may be chosen from 100- or 200-level courses in chemical engineering or other branches of engineering or science, as approved by the Department. No graduate credit will be allowed for any course required for the B.S. degree in chemical engineering at Santa Barbara. In addition to meeting the course credit requirement, each student will be expected to pursue a research project, which may be either theoretical or experimental, and to describe the results of this research in a thesis. The final requirement will be that the student must present and defend the thesis in an oral examination.

Plan II — Thirty-six units of course credit will be required, of which approximately two-thirds must be chosen from 200-level courses in chemical engineering. The remainder may be chosen on the same basis as outlined under Plan I. Because of the importance of the individual research project in graduate education it is anticipated that the only persons allowed to follow Plan II will be those who have had adequate research experience prior to beginning graduate work or who plan to continue for doctoral work at Santa Barbara. The conclusion of a satisfactory M.S. program under Plan II will be marked by an oral examination of the candidate in those subjects studied in the graduate course program.

Master of Science in Nuclear Engineering

Requirements

Acceptance for admission to the Master of Science program is subject to the admission requirements of the Graduate Division. It is expected that most applicants will have obtained undergraduate degrees in nuclear engineering. However, students with degrees in other branches of engineering or in science will be accepted with the provision that they take such undergraduate courses as prescribed by the department as prerequisites for an acceptable graduate course program in nuclear engineering.

Knowledge of a foreign language will not be required for the M.S. degree in nuclear engineering.

It is expected that most students will follow Plan I, although students with special backgrounds or requirements will be permitted, at the option of the Department, to follow Plan II. The details of these plans are as follows:

Plan I — Thirty units of course credit will be required of which approximately fifty per cent must be chosen from 200-level courses in nuclear engineering. The remaining credits may be chosen from 100- or 200-level courses in nuclear engineering or other branches of engineering or science, as approved by the Department. No graduate credit will be allowed for any course taken for the B.S. degree in nuclear engineering at Santa Barbara. In addition to meeting the course credit requirement, each student will be expected to pursue a research project, which may be either theoretical or experimental, and to describe the results of this research in a thesis. The final requirement will be that the student must present and defend the thesis in an oral examination.

Plan II — Thirty-six units of course credit will be required, of which approximately two-thirds must be chosen from 200-level courses in nuclear engineering. The remainder may be chosen on the same basis as outlined under Plan I. Because of the importance of the individual research project in graduate education it is anticipated that the only persons allowed to follow Plan II will be those who have had adequate research experience prior to beginning graduate work or who plan to continue for doctoral work at Santa Barbara. The conclusion of a satisfactory M.S. program under Plan II will be marked by an oral examination of the candidate in those subjects studied in the graduate course program.

Doctor of Philosophy in Chemical Engineering

Requirements

Admission requirements are the same as for the degree of Master of Science.

There are no specific graduate course requirements. However, the student will be expected to plan and secure approval of a program of courses in chemical engineering and in related fields which will provide him with depth of understanding in the principal areas of chemical engineering.

A written preliminary examination will be administered by the Departmental Graduate Committee during the first year. Students unable to demonstrate clearly their capability for doctoral work at this point will be advised to pursue the M.S. degree with thesis (Plan I). At the conclusion of the M.S. program, the student's cumulative performance in courses, research and preliminary examination will be reviewed by the Department and a final decision made whether or not to allow the student to continue a program for the Ph.D. A student who has earned an M.S. degree at another university will be required to take the preliminary examination as a basis for evaluation at UCSB.

Knowledge of a foreign language will not be required of doctoral students.

At the end of the second year of graduate study if the student has continued to make satisfactory progress in courses, a doctoral committee will be recommended to supervise all further progress and examinations. This committee will then administer an oral examination on subject matter related to the research and on any additional material it considers desirable and will make a recommendation on advancement to candidacy.

Each student will be expected to pursue a research project which may be either theoretical or experimental and to describe the results of this research in a dissertation. The final requirement is that the student must present and defend his dissertation in an oral examination conducted by the doctoral committee. The period of time between advancement to candidacy and completion of the final oral examination is expected to be approximately one and one-half years.

Career opportunities

Chemical engineers do interesting and challenging work in chemical process design and development, in operation and management of chemical processing companies, and in research for new approaches in chemical technology. Also, with a B.S. degree from the UCSB program, a qualified student is well-prepared to enter any graduate program in chemical engineering in this country. In addition to obtaining satisfying and socially useful employment, chemical engineers find their undergraduate training excellent preparation for entry into graduate programs in science or professional schools in medicine, law and business.

Nuclear engineering offers varied opportunities for rapid professional advancement and a chance to make significant contributions to the challenging problems of energy, environment, health and society. Recent graduates of the UCSB program have obtained excellent jobs with architect engineer firms, utilities, manufacturers or the Atomic Energy Commission, or have been admitted to outstanding graduate schools for advanced education. Several have competed for and received AEC Intern appointments which pay tuition and full salary in graduate school after a year at AEC headquarters or laboratories.

Correspondence information

Department of Chemical and Nuclear Engineering, Arts Building, Room 1228, University of California, Santa Barbara, California 93106. Phone: (805) 961-3412.

Chemical Engineering

Lower Division course

10 • Introduction to Chemical Engineering (4) Sandall
Prerequisites: Chemistry/1A—B—C; Mathematics/3A—B—C. Elementary principles of chemical engineering. The major topics discussed include material and energy balances, stoichiometry, and thermodynamics.

Upper Division courses

110A—B • jchemical Engineering Thermodynamics (3,3) Staff
Prerequisite: Math/5A. The first and second laws of thermodynamics are used to predict changes of state in frictional processes. Volumetric and phase behavior of real gases and liquids in multicomponent systems are studied. Consideration is given to chemical equilibrium in reacting systems.

120A—B—C • Transport Processes (3,3,3) Myers, Sandall
Prerequisites: Math/5A—B—C; Physics/7C. Principles and applications of fluid mechanics, heat transfer and mass transfer in determining rates of transport processes.

128 • Equilibrium Stage Processes (3) Sandall
Prerequisites: Ch.E./10, Ch.E./110A. Basic principles and design techniques of equilibrium-stage separation processes. Emphasis is placed on binary distillation, liquid-liquid extraction, and multicomponent distillation.

130A—B—C—D • Theoretical Methods in Chemical and Nuclear Engineering (3,3,3,3) Hanna
Prerequisite: Mathematics/5A—B—C. Coordination and extension of previous work in chemical and nuclear engineering using advanced theoretical methods.

140A—B • Chemical Kinetics of Industrial Processes (3,3) Rinker
Prerequisites: Ch.E./110A—B; Ch.E./120A—B—C. Kinetics of homogeneous and heterogeneous reacting systems, with and without catalysis and its use in predicting chemical conversion in flow and nonflow reactors. Emphasis is placed on the behavior and design considerations of packed-bed reactors.

150A—B • Chemical Process Dynamics and Control (3,3) Mellichamp
Prerequisites: Ch.E./120A—B—C, EE/6A. Fundamentals of chemical process dynamics and automatic control including servomechanism theory, transfer functions, block diagrams, frequency response, digital and analog computer simulation.

158A • Introduction to Real-Time Digital Computing (3) Mellichamp
Prerequisite: Consent of instructor. Basic principles of real-time digital information processing with emphasis on the use of computer for data acquisition or control of typical processes.

158B • Multitask Real-Time Digital Computing (3) Mellichamp
Prerequisite: Consent of instructor. A study of the design of computer operating systems needed to carry out parallel or multitask processing in real-time. The concepts of multitask programming and their application to typical real-time problems.

158C • Real-Time Digital Computer Control Systems (3) Mellichamp
Prerequisite: Ch.E./158B or consent of instructor. The architecture, programming, and applications of digital computer control systems. Emphasis on software modularity and on the optimal allocation of resources in two and three level computer hierarchies.

160 • Polymer Systems (3) Rinker
Prerequisite: Consent of the instructor. Treats polymerization from a chemical engineering point of view. Some topics which are considered include polymerization kinetics, polymer rheology, solid-state properties and reactor design for polymerization.

180A—B • Chemical Engineering Laboratory (3,3) Staff
Prerequisites: Ch.E./110A—B; Ch.E./120A—B—C. Experiments in thermodynamics, fluid mechanics, heat transfer, mass transfer, reactor kinetics and chemical processing. Experimental design, analysis of results, and preparation of reports.

182 • Design and Cost Principles of Chemical Processes (4) Staff
Prerequisites: Ch.E./110A—B; Ch.E./120A—B—C; Ch.E./140A—B. The use of chemical engineering and cost principles in solving comprehensive problems in the design of a chemical process.

***198 • Independent Studies in Chemical Engineering** (1-5) Staff
Prerequisite: Consent of instructor. Individual study, either experimental or theoretical, open to qualified seniors in chemical engineering.

Graduate courses

210A—B • Advanced Thermodynamics (3,3) Staff
Prerequisite: Consent of instructor. Advanced topics in thermodynamics including properties of real gases, solutions, phase and chemical equilibria, statistical mechanics, irreversible processes.

220A—B—C • Advanced Transport Processes (3,3,3) Sandall, Myers
Prerequisite: Consent of instructor. A study of the basic laws of momentum, energy and mass transport with emphasis on the prediction of transport rates in chemical engineering applications.

230A—B—C • Advanced Theoretical Methods in Chemical and Nuclear Engineering (3,3,3) Hanna
Prerequisite: Consent of instructor. Mathematical formulation and solution of problems drawn from the fields of fluid mechanics, heat and mass transfer, thermodynamics, kinetics and reactor design.

240A—B • Advanced Chemical Reactor Design (3,3) Rinker
Prerequisite: Consent of instructor. Following a review of the theory of reaction kinetics for catalyzed and non-catalyzed systems, detailed consideration is given to the design and performance of chemical reactors. Mathematical studies of stability and optimization are emphasized in relationship to mass, energy and momentum transport.

250 • Advanced Process Dynamics and Control (3) Mellichamp
Prerequisite: Consent of instructor. Theoretical and experimental determination of chemical process dynamics, state variable design techniques applied to multivariable systems, analysis of sampled data systems with computer control applications, non-linear system design.

252 • Optimum Control Theory (3) Mellichamp
Prerequisite: Consent of instructor. The application of recent theoretical developments to the design of optimum control systems. Introduction to stochastic processes, on-line characterization of time-varying processes, design of adaptive systems, optimum control.

290 • Seminar (5) Staff
Research presentations by graduate students. May be repeated for credit.

594 • Special Topics (1-4) Staff
Special seminar on research subjects of current interest.

596 • Directed Reading and Research (2-4) Staff
A written proposal for each tutorial must be approved by the department chairman and filed with the Graduate Division.

598 • Master's Thesis Research and Preparation (0-12) Staff
Only for research underlying the thesis and writing the thesis. Not applicable to course requirement for M.S. degree.

599 • Ph.D. Dissertation Research and Preparation (0-12) Staff
Only for research underlying the dissertation and writing the dissertation.

Nuclear Engineering

Lower Division courses

10 • Introduction to Nuclear Energy (3) Staff
A survey course introducing various aspects of nuclear energy and radiation. Energy demand and resources. Principles of fission and fusion reactors. Basis of radiation protection standards. Environmental effects of nuclear plants, reactor safety and radioactive waste disposal.

Upper Division courses

110 • Engineering, Energy and the Environment (4) Odette
Examination of energy resources and utilization; Models of social and economic impact; Technology assessment and environmental impact; Energy systems and fuel cycles; Fossil fuels, nuclear power, advanced alternatives, energy conservation & steady state possibilities. Course will focus on assessing risk-benefit aspects of energy utilization as required in impact statements.

111 • Isotopes and Applied Radiation (3) Profio
Radioactive and machine sources of radiation. Interactions of radiation with matter. Chemical and biological effects. Detection and dosimetry. Applications of radioisotopes and radiation in medicine, research and industry.

112 • Principles of Nuclear Energy Conversion (3) Odette
Prerequisites: Chemistry/1C, Mathematics/3C. Thermodynamic principles and laws with emphasis on applications to the problems of nuclear engineering. Relations of macroscopic and microscopic approaches discussed along with some results from statistical mechanics.

115 • Modern Materials Science (3) Odette
Prerequisite: Physics/7C. Principles underlying the mechanical, physical, and chemical behavior of ceramics, polymers and metals. Crystal and defect structure, equilibrium and non-equilibrium phase relations, kinetics, flow fracture oxidation and corrosion.

116 • Nuclear Materials and Radiation Effects (3) Odette
Prerequisite: Nuc.E./115, Physics/116A—B. Application of fundamentals principles of nuclear physics and materials science to nuclear technology. Materials for nuclear applications and radiation effects.

121 • Nuclear Measurements Laboratory (3) Profio
Nuc.E./111 recommended. Nuclear electronics and measurements of nuclear radiations. Topics include: radiation protection and dosimetry, radioactive decay, counting statistics, attenuation and scattering, pulse and denuclear electronics and detectors.

122 • Nuclear Safety and Environmental Impact (3) Profio
Nuc.E./111 recommended. Radiation protection and shielding. Dose from radio²active effluents. Waste disposal systems. Criticality and reactor safety analysis. Siting of nuclear facilities. Licensing and environmental impact evaluation.

125 • Neutronics Laboratory (4) Profio
Nuc.E./140A—B recommended. Measurements of neutronic behavior, investigating neutron diffusion, kinetics, and operation of the L-77 reactor.

130A—B • Nuclear Systems Engineering (3,3) Fenech
Prerequisites: Nuc.E./140A, Ch.E./130A—B: Nuclear power cycles. Heat removal and fluid flow in nuclear systems. Power and temperature distribution in core. Thermal stresses and fatigue in components. Nuclear fuel elements design and performance. Flow induced vibrations. Various reactor concepts.

140A—B • Nuclear Systems Theory (3,3) Fenech
Prerequisite:/Ch.E. 130A—B. The fundamental physical principles underlying the operation of nuclear systems in the framework of the diffusion theory of neutrons.

150 • Nuclear Power Systems Design (4) Fenech
Prerequisite: See instructor. A team of qualified students work together to design and optimize a specified nuclear power system. Basic principles and up-to-date computer codes are used to demonstrate the interplay between safety-economics-reliability.

160 • Principles of Controlled Thermonuclear Reactors (3) Odette
Prerequisite: Senior standing in engineering or physical sciences or consent of instructor. Fundamentals of controlled thermonuclear fusion reactor technology. Fusion reactions. Elementary plasma theory. Heating and confinement of thermonuclear plasmas. Vacuum and magnet technology. Conceptual designs of reactors, energy conversion methods, blanket neutronics and tritium breeding. Materials problems.

170 • Special Projects in Bionuclear Engineering (3) Profio
Prerequisite: Consent of instructor. Directed projects in nuclear medicine, radiology, radiation biology, radiochemistry, nuclear detectors, environmental radioactivity and others. Seminars on current topics by staff and outside speakers, and student reports on projects. Course may be repeated, 9 unit maximum.

***198 • Independent Studies in Nuclear Engineering** (1-5) Staff
Prerequisite: Consent of instructor. Individual study under a faculty supervisor. This course gives an opportunity to qualified senior students to pursue or initiate some independent

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*See L-2 for 198/199 independent studies unit limitations.

experimental or theoretical research.

Graduate courses

216 • Nuclear Materials Engineering (4) Odette
Prerequisite: Nuc.E./115. A systems approach to the influence of the nuclear environment on the behavior of reactor materials and their interactions. Application to fission and fusion technology.

220 • Numerical Methods of Nuclear Systems Analysis (3) Profio
Prerequisites: Engr./3A—B, Nuc.E./140A—B. Numerical methods of solution of nuclear engineering problems. Applications using the available nuclear computer codes developed in industry.

225 • Nuclear Safety & Environmental Engineering (4) Profio
Biological effects of radiation. Dosimetry. Radiation shielding. Dispersion of radioactivity in the environment. Transients and accidents. Safety analysis. Waste management. Environmental statement.

230 • Nuclear Power Economics (3) Fenech
Prerequisites: Nuc.E./130, Nuc.E./140 or equivalent. Actual and future needs for nuclear power. The various components of nuclear power costs. Nuclear fuel cycle costs. Nuclear materials utilization.

250 • Physical Metallurgy (3) Odette
Prerequisite: graduate standing. Relationships between structure and properties of metals; thermodynamics of solids-phase transformations; and defect theory: Mechanical behavior-yield, plastic flow, fracture creep and fatigue, strengthening mechanisms; alloy design, composite materials and radiation effects.

260 • Nuclear Power Systems Design (4) Fenech
Prerequisite: Consent of instructor. A team work design and optimization of nuclear power system using the latest methods of analysis and currently available computer program.

594 • Special Topics (1-4) Staff
Special seminar on research subjects of current interest.

596 • Directed Reading and Research (2-4) Staff
A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division.

598 • Master's Thesis Research and Preparation (0-12) Staff
Only for research underlying the thesis and writing the thesis. Not applicable to course requirement for M.S. degree.

599 • Ph.D. Dissertation Research and Preparation (0-12) Staff
Only for research underlying the dissertation and writing the dissertation.

Electrical Engineering and Computer Science

Professors

John A. Baldwin, Ph.D., Berkeley; defects in solids, dislocations, trapping centers and radiation damage; magnetic means of detection and measurement.
Albert G. Conrad, EE, Yale (Dean Emeritus); A C Machinery.
Jorge R. Fontana, Ph.D., Stanford; quantum electronics, atmospheric pollution problems, underwater acoustic devices.
Steven M. Horvath, Ph.D., Harvard; biomedical engineering, environmental stress.
Kenneth L. Kotzebue, Ph.D., Stanford; microwave solid-state devices and circuits, with emphasis on optimum device-circuit interaction.
George L. Matthaei, Ph.D., Stanford; electromagnetic theory, network theory, microwave devices, and acoustic devices for electric signal processing.
Philip F. Ordung, D. Eng., Yale; solid-state and network theory.
John G. Skalnik D. Eng., Yale; solid-state and active devices (Dean, College of Engineering).
Edwin B. Stear, Ph.D., UCLA; optimal estimation and filtering, optimal and adaptive control, biological control systems, computer analysis of brain waves.
Glen Wade, Ph.D., Stanford; optical/acoustic systems theory and experiment; emphasis on acoustical imaging/computer enhancement of images.
Roger C. Wood, Ph.D., UCLA; educational use of computers, modeling and analysis of computer systems, computer applications (Chairman, EECS Department).

Associate Professors

Augustine H. Gray, Jr., Ph.D., Cal-Tech; digital signal processing, digital filters, speech analysis and synthesis.
Glenn R. Heidbreder, D. Eng., Yale; communication theory; signal processing in radar and digital communication systems; digital image processing.
James A. Howard, Ph.D., UCLA; digital system design, CAI, mini/micro computer applications, process control.

Assistant Professors

Phillip E. Allen, Ph.D., Kansas; active network theory, computer-aided design and analysis, instrumentation.
David L. Heald, Ph.D., UCSB; solid-state device and integrated-circuit design and fabrication, particularly digital memory and switching devices.
Leon Presser, Ph.D., UCLA; computer science; in particular, operating systems, software management, and translator writing systems.

Lecturers

Virgil D. Gligor, M.S., Berkeley; operating systems, computer architecture, and programming languages.
Richard C. Neville, Ph.D., Cal-Tech; solid-state materials, phenomenon and devices; III-V, II-VI semiconductors, optical detectors.
David F. Palmer, Ph.D., Duke; radar system design with emphasis on data processing techniques and requirements; software engineering.
Sabina H. Saib, Ph.D., UCLA; computer science: pattern recognition, programming languages, and artificial intelligence.
Joseph J. Sayovitz, Ph.D., Minnesota; electrical machinery.
Robert J. Schilling, Ph.D., Berkeley; modeling and simulation of nonlinear dynamical systems.
George D. Thompson, Jr., Ph.D., USC; digital phase-locked loops, estimation theory, special-purpose signal processors.

Concerns of the department

The Department of Electrical Engineering & Computer Science (1) offers a major leading to the Bachelor of Science degree; (2) offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees; (3) offers for all undergraduates courses whose aims are to provide practical insight into common electrical systems (EE/1 and EE/10), and a working knowledge of computer programming (EE/5 and EE/7); and (4) offers courses at all levels in traditional electrical engineering areas and in computer science to students who qualify by virtue of experience in physical and social sciences and other engineering disciplines.

The undergraduate major in electrical engineering and computer science pursues a planned program of study which (1) provides a sound background in the mathematical and physical principles on which modern electrical engineering and computer techniques depend, and (2) provides, in an area of specialization, sufficient knowledge to qualify the student for either the practice of engineering skills at a beginning professional level or for advanced professional engineering studies.

Graduate students in electrical engineering and computer science may pursue, in either traditional electrical engineering areas or in computer science, programs of study which sharpen their professional technical skills (M.S. program) or prepare them for careers in teaching or advanced research (Ph.D. program).

Bachelor of Science

Schedules should be planned to meet the requirements in General Education and in the major. Detailed descriptions of these requirements are listed in this catalog, Chapter H, "College of Engineering" and in the separate bulletin, "College of Engineering Announcement."

Preparation for the major

The following Lower Division courses are required: Engineering/3A—B; EE/2A—B—C; Chemistry/1A—B—C; 1AL—BL—CL; Math/3A—B—C; 5A—B—C; ME/10; and Physics/7A—B—C; 7AL—BL—CL.

Upper Division major

The following Upper Division courses are required: EE/130A—B; EE/134; EE/136A—B; EE/139A—B; and ME/105.

Students must select a minimum of 24 units from a group of elective EE courses. With the exception of EE/105A—B and EE/130C, the EE elective units are normally earned in the senior year. Examples of acceptable senior programs are given in the following listings. More than the needed 24 EE units are listed in each of the four example programs to indicate that a degree of flexibility is available within each program. Although not specifically listed in the sample programs, EE/105A—B; EE/158A—B—C—D; EE/170A—B—C; and EE/199 may be selected. Also, representative non-EE elective courses are listed.

Program in Computer Engineering and Computer Science

Fall:	EE/165A	EE/151	EE/140
Winter:	EE/165B	EE/152A	EE/154
Spring:	EE/165C	EE/152B	EE/150 or EE/173

Non-EE electives: Math/104A—B—C; 104AL—BL—CL; 108A—B; 110; 150; 151; Sociology/109A; 111; 113.

Program in Solid-State and Quantum Electronics

Fall:	EE/160A	EE/145A	EE/140
Winter:	EE/160B	EE/145B	
Spring:	EE/160C	EE/145C—CL	EE/150

Non-EE electives: Math/108A—B; 122A—B; Physics/115A—B; 123; and 141.

Program in Microwaves and Communications

Fall:	EE/140	EE/145A	
Winter:	EE/146A	EE/145B	EE/144A
Spring:	EE/146B—BL		EE/144B

Non-EE electives: Math/108A—B; 122A—B; Physics/115A—B; 123; and 141.

Program in Systems Science

Fall:	EE/140		EE/145A
Winter:	EE/147A	EE/146A—AL	EE/145B
Spring:	EE/147B	EE/146B—BL	EE/150

Non-EE electives: Math/104A—B—C; 108A—B; 122A—B; and 118A—B—C.

Master of Science

Requirements

1. In addition to the general requirements for admission to graduate status, the Department requires a bachelor's degree or its equivalent from a school or college of recognized standing.

2. Applicants with undergraduate preparation that is deemed inadequate may be required to take remedial courses.

3. The degree is administered under Plan II, which requires 36 units of course work approved by the Departmental Graduate Adviser, and the passing of a comprehensive final examination. A minimum of 18 of the required 36 units must be in graduate courses (200 series), at least 12 of which must be in the Department of Electrical Engineering and Computer Science. The remaining 18 required units, or any portion thereof, may be approved Upper Division courses in engineering, mathematics, chemistry, physics, or other approved areas. No more than 50% or 18 units of Upper Division courses (whichever is less restrictive) are permitted. Fields of study include biomedical engineering, circuits, communications, computers, digital signal processing, magnetics and memories, microwaves, quantum electronics, solid-state electronics, and systems science.

4. Programs in the various fields of study are tailored to meet individual needs. For example, a typical program in the computer area might include selections from the undergraduate courses, EE/105A—B; 150; 151; 152A—B; 158A—B—C—D; 165A—B—C; and 173, as well as selections from the graduate courses, EE/252A—B—C; 273A—B—C; EE/274A—B—C; 275A—B—C; and 277A—B—C. Special topics in computers are also available under EE/210; individual projects can be done under EE/207A—B—C. Directed research in any of the above fields is available for advanced students under EE/596. A maximum of 9 units designated EE/207 and/or EE/596 may be applied in satisfaction of the M.S. unit requirement.

Doctor of Philosophy

Requirements

1. In addition to the general requirements for admission to graduate status, the Department requires a Master of Science or equivalent, and evidence of ability to profit from both instructional and research activities of the Ph.D. program.

2. Subject to having satisfied the prescribed residence require-

ments, the student may take the oral qualifying examination at such time as the faculty of the Department deems the student to be prepared.

3. There are no specific course requirements for the Ph.D. program; however, the student will be expected to elect such courses as needed to prepare for the qualifying examination and for research.

4. Prior to the oral qualifying examination, the Department will administer such examinations as it deems necessary for the determination of the adequacy of the depth and breadth of the student's knowledge.

5. A dissertation will be submitted and defended in an oral examination.

Career Opportunities

The major in electrical engineering and computer science prepares undergraduates for a wide range of positions at a beginning professional level in business and in government, and private industrial research, development, and manufacturing organizations. It teaches a disciplined, logical and practical approach to problem solving which has wide application outside the technical framework in which it is presented; hence it often serves as an educational foundation for diverse professional fields.

The M.S. program provides postgraduate professional education leading to increased career opportunities in the above positions. The Ph.D. program offers educational opportunities at an advanced level leading to careers in research and teaching, and to positions of professional leadership.

Teaching Credentials

A major in electrical engineering may relate to teaching at a secondary level. Computer science is an appropriate program for the secondary teaching credential. Details may be obtained from a designated counselor in the EECS Department, or from the Graduate School of Education.

Lower Division courses

1 • Understanding Man's Electrical Environment (3) Staff
Course is nonmathematical. Designed to give practical insight into common electrical systems, such as radio, television, audio, tape recording, light sources, telephones, computers, machines, antipollution devices. In laboratory, student will construct and debug *any* piece of electrical or electronic equipment of his own choosing.

2A—B—C • Circuits, Devices and Systems (4,4,4) Baldwin
Prerequisites: Mathematics/3A—B—C, ME/10, or consent of instructor. 1. Circuits: natural response, forced response, complete response, sinusoidal steady state, theorems. 2. Electronic Devices: principles, linear models, amplifiers, digital electronics, dc machines, transformers. 3. Systems: feedback, analog computers, instrumentation, automatic control. 4. On-line computing.

4 • Engineering, the University, and Society (1) Wade
How engineering relates to the university and to society. Series of ten lectures, many to be given by guest speakers, will cover (1) relationship between a liberal university education and the objective of a university engineering department, and (2) the place of engineering in society. Not to be offered 1975-76.

5 • Introductory Digital Computing Lab (3) Heald
A brief introduction to basic components, organization and operation of digital computers. Provides usable knowledge of FORTRAN coding and program preparation for an IBM 360/75 digital computer with emphasis on the applications of digital processing.

6A—B • Circuits and Electronics (4,4) Staff
Prerequisites: Mathematics/3A—B—C, ME/10 or consent of instructor. Introduction to basic electrical circuits and electronics. Includes Kirchhoff's laws, network responses, power distribution, diodes, transistor circuits, analog computation, instrumentation, and system concepts. For the non-EE major.

7 • Intro to the UCSB On-Line Computing System (3) Baldwin
Prerequisites: Mathematics/3A—B (may not be taken concurrently) or a working knowledge of differential and integral calculus. Introduction to scientific programming on OLS using MOLSF. COL not treated. Computation using single numbers, lists and arrays of real and complex numbers. Indexing, program manipulation, branching, repeating, interpolation; integration; differentiation, convolution. Primarily for nonmajors with no OLS experience. Knowledge of differential and integral calculus and ability to interpret equations necessary.

8 • Introduction to APL. (2) Baldwin.
Prerequisites: EE/5 and EE/7, or Sociology/109A—B, Mathematics/3A—B, or consent of instructor. Introduction to the APL system. Primitive operators, data types, operations on scalars, lists and matrices. Control structures, functions and recursion. Extended operator definitions, file I/O and graphics.

10 • Introduction to Audio Technology (3) Staff
EE/1 recommended but not required. An elementary introduction to the principles and concepts of audio. Includes the study of audio signal sources, recording, processing, amplification, filtering, equalization, loudspeakers, audio measurements, acoustics and psychoacoustics. Demonstrations of the above topics will be presented.

105A • An introduction to Digital Computing (3) Staff
Prerequisite: EE/5 or equivalent. Digital computer organization and introduction to hardware and software concepts. Elements of machine-language programming. Boolean algebra and logic networks. Computer subsystem configurations. Operation of digital computing systems.

105B • Intermediate Computer Programming and Organization (3) Staff
Prerequisite: EE/105A, or consent of instructor. Continuation of the study of the internal features of a digital computer, with emphasis on a particular widely used machine. The course is designed to give students a working knowledge of the assembler language for that machine.

107A—B—C • Directed Research (1-4) Staff
Prerequisite: Consent of instructor. Directed research projects open to qualified undergraduates in electrical engineering or related fields. Research projects are arranged by student and staff member. The course is designed to give unusual undergraduates early experience in research. Not acceptable for departmental senior electives.

110 • Audio Engineering (3) Staff
Prerequisite: Junior standing in EE or physical sciences, or consent of instructor. Primarily project-oriented course with students taking a project and presenting the results of their study. Emphasis will be placed on understanding some aspect of audio engineering in depth. Project presentations will be supplemented by lectures on advanced topics in audio.

113 • Systems Analysis and Information System Design. (4) Sonquist
Prerequisites: EE/3A or EE/5 or Mathematics/6A or Sociology/109A or equivalent; or consent of instructor. Introduction to principles and techniques involved in the analysis of information processing requirements of large-scale organizations and the design and development of computer-based information systems. Includes overview of implementation, control and evaluation phases of system development. This course is the same as Sociology/113.

115 • Minicomputer-based Computer-aided Instruction Systems (4) Howard, Staff
Prerequisite: Senior standing or consent of instructor. For students who plan to utilize computers as teaching tools. Computer fundamentals, developing skill in a programming language. Programming techniques with applications to educational problem-solving strategies. Techniques of utilizing the computer to assist in providing individualized instruction. CAI history, modes, languages, software and hardware requirements. Methods of developing courseware. Economics of CAI systems. This course is the same as Sociology/115.

130A—B—C • Engineering Analysis (4,4,3) Staff
Prerequisites: Mathematics/5A—B—C, EE/2A—B—C or consent of instructor. Study of mathematical principles applied to engineering. In particular, complex variables, Fourier analysis and linear systems, engineering probability.

134 • Introductory Field Theory (3) Matthaei, Fontana
Prerequisites: Physics/7B or equivalent, Mathematics/5C. Electric- and magnetic-field concepts and laws. Fundamentals of vector analysis. Dipoles, properties of materials, energy, Maxwell's equations. Laplace, Poisson, and wave equations, and methods for their solution. Plane waves.

136A—B • Electronics (4,4) Allen, Kotzebue
Prerequisite: Mathematics/5C, EE/2C or consent of instructor. Electronics for electrical engineering students. The emphasis is on the study of basic circuits employing semiconductor devices, with particular attention given to the analysis and design of small-signal, broadband amplifiers.

136C • Digital Electronics (4) Allen
Prerequisites: EE/136A or consent of instructor. This course

will provide an introduction to electronic circuits used in digital systems. It will consist of a study of device switching characteristics, basic active logic circuits, IC logic families, sequential and combinatorial logic circuits with emphasis on general operating principles.

138A • Introductory Circuits (3) Staff
Prerequisite: Transfer junior standing in electrical engineering. Circuit theory for transfer students at the junior level who have not had the equivalent of EE/2A—B—C. Usually taken concurrently with EE/138B.

138B • Introductory Electronics (3) Skalnik
Prerequisite: Transfer junior standing in electrical engineering. Electronics for transfer students at the junior level who have not had the equivalent of EE/2A—B—C. Usually taken concurrently with EE/138A.

139A—B • Network Theory (4,4) Fontana
Prerequisites: EE/2C or EE/138A, EE/130A, and concurrent registration in EE/130B. Analysis and design of linear electric networks using time and frequency-domain methods and computer techniques.

140 • Analysis of Signals and Linear Systems (4) Heidbreder, Stear
Prerequisites: EE/130A—B, EE/139A—B or consent of instructor. Analytical representation of signals in electrical communications and control. Orthogonal function expansions, continuous and discrete Fourier transforms, Laplace and z-transforms. Sampling theory, autocorrelation, energy and power spectra. Analysis of continuous and discrete linear systems. Fundamental concepts of feedback systems.

143A—B • Alternating-Current Machinery (4,3) Staff
Prerequisite: EE/139A—B, or consent of instructor. Principles of alternating-current machinery. Transformers, induction machinery, synchronous machines, power conversions, adjustable-speed drives.

144A—B • Electromagnetic Fields and Waves (3,3) Matthaei
Prerequisite: EE/134 or equivalent. Waves on transmission lines, Maxwell's equations, mathematical techniques for dynamic fields, skin effect, propagation and reflection of electromagnetic waves in materials with different electrical properties, waveguides, resonant cavities, and antennas. Microwave and optical-device examples. Selected experiments.

145A • Large-signal Electronics (4) Kotzebue
Prerequisite: EE/136A—B, or consent of instructor. A study of semiconductor electronic circuits with emphasis on the analysis design of large-signal amplifiers, oscillators, and wave-shaping circuits.

145B • Communications Electronics (4) Kotzebue
Prerequisite: EE/145A, or consent of instructor. The analysis and and design of solid-state communication circuits. Topics covered will include RF and IF amplifiers, AGC circuits, mixers and demoodulators.

145C • Special Topics in Electronics (2) Kotzebue
Prerequisites: EE/145B or consent of instructor. Selected topics of current interest in analog electronics. The specific areas covered will vary with class interests.

145CL • Special Topics in Electronics (1) Kotzebue
Prerequisites: Concurrent registration in EE/145C. Individual projects in analog electronics, selected to complement the topics covered in EE/145C.

146A • Analog Communication Theory and Techniques (3) Heidbreder
Prerequisite: EE/140, or consent of instructor; EE/130C recommended. The representation of noisy signals in communication systems. Elementary random processes. Modulation theory. AM, FM, PM and analog pulse modulation and demodulation techniques. Noise models in electronic circuits. System noise and performance calculations.

146AL • Analog Communication Laboratory (1) Heidbreder
Prerequisite: EE/146A must be taken concurrently. Normally required of all students enrolled in EE/146A, but is optional for students also enrolled in EE/145B or who demonstrate a suitable background of laboratory experience. Measurements of random noise. Experiments in techniques of modulation and demodulation.

146B • Digital Communication Theory and Techniques (3) Heidbreder
Prerequisites: EE/140, EE/146A or consent of instructor, EE/130C recommended. The quantitative measure of information. Introduction to the fundamental theorems of information theory and their implications in system design. Quantization and coding. Pulse code modulation (PCM). Matched filters, PCM modems, elementary decision-theory concepts. Concepts of error detection and correction. Coded PCM systems. Feedback communication systems.

146BL • Digital Communication Laboratory (1) Heidbreder
Prerequisite: EE/146B must be taken concurrently. Normally required of all students enrolled in EE/146B but is optional for students also taking EE/152B or who demonstrate a suitable background of laboratory experience. Experiments in matched filtering, A—D conversion, D—A conversion, and generation and detection of waveforms for digital communication.

147A • Introductory Systems Science I — Feedback Systems (4) Stear
Prerequisite: EE/140. Criteria for feedback systems design-frequency domain and time-domain specifications. Design techniques for multiloop feedback systems. Direct synthesis methods. Computer-aided design methods; automated design methods. Describing function analysis of nonlinear feedback systems. Design of nonlinear feedback systems.

147B • Introductory Systems Science II — State-Space Methods (4) Stear
Prerequisite: EE/147A. Vector spaces, state-space equations for dynamic systems, solutions. Fundamental matrices, transition matrices. Final-value control. Controllability. Observability. Canonical forms for state-space equations. Linear-quadratic control problems. Stability analysis using Liapunov functions and phase plane.

149A—B • Active and Passive Network Synthesis (4,4) Allen
Prerequisites: EE/136A—B and EE/139A—B. This course combines the areas of electronics and network theory in the subject of passive and active network design. Topics include passive synthesis, optimization techniques, approximations to ideal filters, distributed networks, sensitivity and the modern design techniques and applications of active filters.

150 • Analog Computation (3) Wood
Prerequisites: Mathematics/5C or equivalent, EE/2A—B—C or consent of instructor. Application of analog computers to engineering and scientific problems. Study of simulation methods including analog/hybrid and digital techniques.

151 • Computer Memories (3) Baldwin
Prerequisites: EE/2A—B—C or EE/138A—B or consent of instructor. Hardware aspects of digital storage systems. Magnetic surface recording; access, digit and control circuits for random-access systems; core storage; magnetic thin films; semiconductor storage; read-only and read-mostly memory; associative memory.

152A • Switching Theory (4) Howard
Prerequisite: EE/105A or consent of instructor. Boolean algebra, switching functions. Application of Boolean algebra to the design and analysis of combinational logic nets; minimization procedures. Analysis and synthesis of sequential switching circuits; synchronous and asychronous operation; state minimization; hazards and races.

152B • Digital System Design (4) Howard
Prerequisite: EE/152A or consent of instructor. Formal description of digital systems. Design of functional subsystems; arithmetic processors, storage systems, sequence generators. Organization and design of general-purpose digital computers and of special-purpose digital systems.

154 • Introduction to Computer Architecture (3) Staff
Prerequisites: EE/105A; EE/105B can be taken concurrently. Introduction to the architecture of computer systems. Topics include channels, controllers, memory hierarchy, interrupt systems, software versus hardware tradeoffs, I/O devices, overview of components of operating systems, discussion of architecture of existing systems.

155 • Solid-State Power Devices (3) Skalnik
Prerequisites: EE/136A—B, 143A; 160A or consent of instructor. High-level operation of solid-state devices. Application to rectification, inversion and control. Not to be offered during 1975-76.

158A—B • Digital Signal Processing (4,4) Gray
Prerequisites: Upper Division standing in Engineering, Mathematics or Physical Sciences. Topics covered will include discrete networks, difference equations, digital filter design, design of convolution operators, orthogonal functions, fast Fourier transform, generalized frequency measures, generalized spectral analysis.

158C • Speech Analysis and Synthesis (3) Gray
Prerequisite: EE/158B or consent of instructor. Vocal tract modeling, computer analysis and synthesis of speech with emphasis on linear predictive methods.

158D • Computer Solution of Partial Differential Equations (4) Staff
Prerequisite: Mathematics/104 or EE/105A or consent of instructor. The numerical analysis of surfaces. Use of the digital computer to solve partial differential equations arising in engineering and the physical sciences.

160A • Introductory Quantum Mechanics (3) Wade
Prerequisites: EE/134, ME/105, EE/130A—B or equivalent. Electron wavefunctions, electron diffraction and potential wells. Operators, eigenfunctions and observables. Harmonic oscillators, hydrogen-atom wavefunctions and properties, electrons in crystals and metals.

160B—C • Solid-State Device Electronics (3,3) Skalnik
Prerequisite: Senior standing or consent of instructor. Theory, design and fabrication of solid-state devices. Includes thin-film components, semiconductor diodes, transistors, MOSFET's and integrated circuits.

165A • Information Structures (3) Presser
Prerequisite: EE/105A or consent of instructor. Study of fundamental structures employed to represent information in main computer storage. Advantages and disadvantages of using alternative information structures in the solution of problems. Methods of storage management. Principles of data base design.

165B • Formal and Programming Languages (4) Staff
Prerequisite: 165A or consent of instructor. Basic concepts

in the theory of formal languages and automata. Analysis and evaluation of programming languages from a data and control structure point of view. Interactive languages. Consideration of various programming languages.

165C • Translation of Programming Languages (4) Staff
Prerequisite: EE/165B or consent of instructor. Structure of translators. Assemblers, interpreters and compilers. Basic translation techniques. Translators for batch and on-line environments. Translation of precedence and LR(k) languages. Rudiments of translator writing systems.

170A • Introduction to Biomedical Engineering (3) Horvath
Prerequisite: Senior standing in engineering. Survey of application of engineering principles and methods to problems arising in the life sciences (medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design; etc.

170B—C • Biomedical Engineering (3,3) Horvath
Prerequisites: EE/170A and consent of instructor. Detailed investigation of specific biomedical engineering problems, tours of local medical facilities; demonstrations of physiological and medical instrumentation systems. Topics to be determined based on progress in the various fields of biomedical engineering.

173 • Architecture of Operating Systems (3) Presser
Prerequisite: EE/165A or consent of instructor. Study of the structure, design and evaluation of operating systems. Integrated consideration of architectural software/hardware tradeoffs.

192 • Projects in Computer Science. (4) Staff.
Prerequisite: Consent of instructor. Projects in computer science for advanced undergraduate students. May be repeated for credit with consent of instructor, but with the limit of 12 units for the three courses, EE/192, Mathematics/192 and Sociology/192 combined.

193 • Internship in Industry (1-4) Staff
Prerequisites: Consent of instructor. Special projects for selected students. Offered in conjunction with engineering practice in local industrial and research firms. May be repeated to a maximum of four units as Departmental elective.

194 • Group Studies for Advanced Students (1-4) Staff
Prerequisite: Consent of instructor. Group studies intended for small number of advanced students who share an interest in a topic not included in the regular Departmental curriculum.

199 • Independent Studies in Electrical Engineering (1-5) Staff
Directed individual study, normally experimental, open to qualified students having at least 84 units in the Department of Electrical Engineering. 199 Courses are limited to no more than five units in one quarter, no more than 15 units per year, and a maximum of 30 units of independent study.

201A—B • Electromagnetic Theory (3,3) Matthaei
Prerequisites: EE/144A—B or equivalent. Fundamental theorems and techniques for treatment of electromagnetic boundary value and radiation problems. Perturbational, variational, and computer-numerical methods, with microwave engineering examples.

201C • Antennas (3) Matthaei
Prerequisites: EE/144A—B or equivalent. Classical and computer-numerical methods for analysis and design of antennas. Single-element antennas, antenna arrays and analysis of mutual-impedance effects, aperture antennas, and frequency independent antennas. Offered in alternate years with EE/201D. Will not be taught 1975-76.

201D • Microwave Circuits (3) Matthaei
Prerequisites: EE/144A—B. EE/144B may be taken concurrently. Field and circuit theory applied to waveguide and transmission-line networks. Analysis of discontinuities and couplings, resonators, filters, and directional couplers. Fundamental limitations for wideband impedance matching, design techniques for optimum wideband coupling structures for solid-state (and other) devices. Offered in alternate years with EE/201C. Will be taught 1975-76.

202A • High-frequency Transistor Circuits (3) Kotzebue
Prerequisites: EE/136A—B or consent of instructor. Techniques for the design of transistor circuits at high frequencies. Topics include broadbanding by negative feedback, stability factors, the Linvill design technique, and the use of scattering parameters in amplifier design.

202B • Microwave Solid-state Electronics (3) Kotzebue
Prerequisite: EE/202A or consent of Instructor. Selected topics in microwave electronics such as parametric amplifiers, tunnel diode amplifiers, frequency multipliers, transferred electron devices, and IMPATT and TRAPATT devices.

203A—B—C • Introduction to Statistical Communication Theory (3,3,3) Heidbreder
Prerequisite: Undergraduate courses in linear transform theory, or consent of Instructor. A study of the mathematical analysis of random signals and noise, the response of systems to random inputs, system synthesis based on statistical performance specifications and applications of the concept of a statistical measure of information content in a signal. EE/203C taught in alternate years with 203D; will not be taught 1975-76.

203D • Detection Theory (3) Heidbreder
Prerequisite: EE/203A. Hypothesis testing and its application to the formulation of decision rules for the "optimal" detection of signals in a noisy environment. Selection of optimality criteria, the derivation of optimum receivers, applications in radar and digital communications. Discussions of estimation theory as it relates to the estimation of parameters of detected signals. To be offered in alternate years with EE/203C. Will be taught 1975-76.

204A—B—C • Advanced Engineering Analysis (3,3,3) Gray
Prerequisite: EE/130A—B or equivalent. Selected topics in advanced mathematics for engineers, including such topics as engineering applications of some higher transcendental functions, asymptotic expansions, calculus of variations, etc.

206A—B • Machine Methods of Network Analysis (3,3) Ordung
Prerequisite: Consent of instructor. Network formulations appropriate to machine analysis, selected topics in matrix theory and applied numerical analysis, linear network analysis in the frequency domain, linear and nonlinear analysis in the time domain.

206C • Network Synthesis (3) Ordung
Prerequisite: Consent of instructor. Positive real-function theory, one- and two-port passive realizations, Hilbert transforms, and rational function approximations.

207A—B—C • Research Projects or Independent Studies (1-6) Staff
Graduate research projects or independent studies to be arranged between students and staff members.

208A—B—C • Optical Systems Theory (3,3,3) Wade
Prerequisites: EE/144A—B or equivalent, EE/146A—B or equivalent. Communication theory techniques, including Fourier transforms and autocorrelation functions, as applied to optical systems. Mathematical descriptions due originally to Rayleigh, Sommerfeld, Abbe, Michelson, Kirchhoff, Fresnel and others. Coherent image formation, holographic wavefront reconstruction, optical-data processing and other topics.

210 • Special Topics in Electrical Engineering (1-6) Staff
Special seminars or group study on research subjects of current interest. Course conduct to be arranged.

211A—B • Quantum Electrodynamics for Engineering Applications (3,3) Wade
Prerequisite: EE/160A or consent of instructor. Dirac formulation. "Ket" and "Bra" vectors. Interaction between electromagnetic fields and charged particles. Interaction of radiation and matter typical to problems in quantum electronics and nonlinear optics. Directed toward engineering applications rather than high-energy physics.

230A—B—C • Solid-State Device Design and Processing (4,4,4) Heald, Ordung, Neville
Prerequisites: EE/160A—B—C or equivalent. Consideration of solid-state device design, especially as it pertains to fabrication and processing. The course is supported with a laboratory containing diffusion furnaces, an epitaxial reactor, evaporators, interferometer, four-point probe, scanning electron microscope, photo-masking facility, ion implanter, and associated equipment.

236A—B—C • Linear Active Circuits (3,3,3) Allen
Prerequisites: EE/136A—B or consent of instructor. An introduction to the analysis and design of discrete and integrated linear active networks from dc to video frequencies. Topics include stability, sensitivity, computer-aided analysis, operational amplifers, functional design, applications of linear IC's and RC active networks. Taught in alternate years with EE/239A—B—C. Will not be taught during 1975-76.

239A—B—C • Special Topics in Circuit Theory (3,3,3) Allen
Prerequisite: Consent of instructor. A study of topics of current interest in circuit theory. Includes areas of active and nonlinear circuits, network and system theory, computer-aided analysis and design, digital filters and circuits, topology, graph theory, and solid-state circuits. May be repeated for credit with consent of instructor. Taught in alternate years with EE/236A—B—C. Will be taught during 1975-76.

247A • Systems Science I — Systems Optimization by Programming Methods (4) Stear
Prerequisite: EE/147B or consent of instructor. Linear programming models, solution methods. Functions of several variables and nonlinear programming models. Partial derivatives, gradients; the implicit function theorem; classical optimization methods for nonlinear programming models. Kuhn-Tucker conditions. Computation methods for nonlinear programming problems. Dynamic programming models; solution techniques.

247B • Systems Science II — Dynamic Systems Optimization (4) Stear
Prerequisites: EE/147B and 247A, or consent of instructor. Function spaces; formulation of dynamic systems optimization problems as constrained variational calculus problems. Necessary and sufficient conditions for extrema of general functionals. First-order necessary conditions for optimum dynamic systems. Necessary conditions for singular problems. Optimum feedback systems. Computational algorithms.

247C • Systems Science III — Optimal Estimation and Filtering (4) Stear
Prerequisites: EE/247A—B; 203A. Random variables; random vectors; conditional density functions; conditional expectations. Covariance matrices; jointly Gaussian random vectors. Basic optimal estimation theory. Random vector

sequences; processes. Calculus-in-the-mean for random processes. Optimum sequential estimation theory; Kalman filtering. Optimal data smoothing.

248A • Systems Science IV — Advanced Dynamic Systems Optimization (4) Stear
Prerequisites: EE/247A—B. Necessary conditions for optimum dynamic systems based on second variation. Conjugate point conditions, extremal fields, sufficient conditions for weakly optimum dynamic systems. Sufficient conditions for strongly optimum dynamic systems. Hamilton-Jacobi theory of optimum dynamic systems, dynamic programming. Second-order computational methods. Will be taught alternate years. Will not be taught 1975-76.

248B • Systems Science V — Optimal Nonlinear Estimation and Filtering (4) Stear
Prerequisite: EE/247C. Optimal nonlinear sequential estimation and filtering — discrete time: approximately optimal estimation and filtering using Taylor-series expansions, quasi-moments, Gaussian sum approximations, and lumped-mass approximations. Stochastic integrals and differential equations. Optimal nonlinear estimation and filtering — continuous time. Innovation processes. The representation theorem. Will be taught alternate years. Will not be taught 1975-76.

251A—B • Advanced Topics in Computer Memories (3,3) Baldwin
Prerequisites: EE/151 or consent of instructor. Digital recording, write and read processes: tape, disc and drum. Advanced high-density magneto-optic memories. Content-addressable memory. Thin films as memory elements.

252A • Sequential Machines and Automata Theory (3) Howard
Prerequisite: EE/152A—B or consent of instructor. Definition and representation of finite state automata and sequential machines. Equivalence of states and machines, congruence, reduced machines, and analysis and synthesis of machines. Decision problems of finite automata, partitions, covers, generalized and incomplete machines. Regular expressions and machine specifications.

252B • Advanced Digital Computer Design and Organization (3) Howard
Prerequisites: EE/152A—B or consent of instructor. Computer system design problems such as logic and organization of digital arithmetic processors, algorithmic acceleration, storage management, memory utilization, error detection in digital arithmetic. Comparison of examples of various solutions to system design problems. Selected topics on novel computer organizations.

252C • Advanced Topics in Switching Theory (3) Howard
Prerequisites: EE/152A—B or consent of instructor. Threshold logic; basic properties, threshold functions, realization, Ternary switching circuits. Majority and minority logic. Switching circuit reliability. Multilevel synthesis techniques. Comparison of algebraic simplification methods.

253 • Magnetic Recording (3) Baldwin
Prerequisite: EE/151. Magnetic recording and playback, analog and digital. Heads; magnetic coating; record and reproduce processes; noise; transports; direct record and reproduce electronics; fm record and reproduce electronics; TV recording; digital cassette/cartridge.

254 • Ferrite & Garnet Microwave Devices (3) Baldwin
Prerequisite: EE/151. Microwave properties of magnetic materials; wave propagation in gyrotropic media; circulators; isolators; switches, etc.

255 • Future Trends in Computer Memories (3) Neville
Prerequisites: EE/105A, EE/151, or consent of instructor. A discussion of the future trends of holographic, semiconductor, magnetic and other types of bulk storage. The current state of the art, future limits and needs will be covered.

260A—B • Principles of Quantum Electronics. (3,3) Fontana
Prerequisites: EE/160A and EE/144A or equivalent. Energy levels in atoms, ions, and molecules. Interaction between radiation and quantized systems. Stimulated emission devices. Optical resonators. Lasers. Electro-optic devices and nonlinear effects.

261A—B—C • Seminar in Materials Research (2-2-2) Baldwin
Prerequisite: Consent of instructor. Seminars on research of current interest in electrical, magnetic, mechanical, and thermal properties of materials. Student participation in presentation of seminars. May be repeated. This course is the same as ME/261A—B—C.

270A—B • Special Problems in Biomedical Engineering (3,3) Horvath
Prerequisite: Consent of instructor. Biomedical engineering approach to physiological systems using small-group interactive-study approach. Brief discussion of physiological basis of system and diseases related to system followed by conceptual development of models, evaluation and development of instrumentation and diagnostic tools and procedures. Use of computer technology and systems design for system involved.

273A—B—C • Software Architecture (3,3,3) Presser
Prerequisite: Consent of instructor. Advanced topics in the structure, design and evaluation of software systems. Integrated consideration of architectural software/hardware tradeoffs.

274A • Automatic Theorem Proving (3) Saib
Prerequisite: EE/165A or consent of instructor. An investigation into techniques which can be efficiently implemented on computers to prove theorems and to solve problems in artificial intelligence. We will study applications to question/answering systems and proving the correctness of computer programs.

274B • Heuristic Programming (3) Saib
Prerequisite: EE/165A or consent of instructor. Survey of current literature and existing programs which solve artificial intelligence problems. Topics covered will be robotics, game playing, problem solving, and heuristic search theory.

274C • Advanced Topics in Artificial Intelligence (3) Saib
Prerequisite: EE/165A or consent of instructor. Group study on topics of current interest in artificial intelligence. Topics may include pattern recognition, natural language translation, simulation of intelligent processes, and image and speech processing.

275A—B—C • Special Topics in Computer Programming, Design, and Applications (3,3,3) Staff
Prerequisite: Consent of instructor. Computer seminar or group study on computer topics of current interest, including minicomputers, computer graphics, hybrid computations, simulation, advanced compiler theory, on-line time-sharing systems and pattern recognition. May be repeated for credit with consent of instructor.

276A—B—C • Special Topics in Solid-State Devices (4,4,4) Ordung, Heald, Skalnik, Neville
Prerequisite: Consent of instructor. Solid-state device group study seminar on topics of current interest which may include surface and bulk phenomena, devices of interest to integrated circuits and optoelectronics, and their fabrication. May be repeated for credit with consent of instructor.

277A • Computer Graphics (3) Saib
Prerequisite: EE/105A or consent of instructor. Basic concepts of interactive devices, language for computer graphics, interrupt handling techniques, display-list manipulations, and display processors will be covered. A survey of outstanding graphics systems will be made.

277B • Pattern Recognition (3) Saib
Prerequisites: EE/130A—B; 105A, or consent of instructor. Algorithms used in the automatic recognition of patterns by machine. Machine learning and classification problems, scene analysis, speech recognition and character recognition techniques will be covered.

277C • Feature Extraction (3) Saib
Prerequisites: EE/130A—B—C; 105A, or consent of instructor. Preprocessing methods used for input to pattern recognition algorithms. Dimensionality reduction of measures of feature effectiveness, and transforms used for feature extraction are covered. Topics from current research will be included.

596 • Directed Research (1-6) Staff
Research, either experimental or theoretical, may be undertaken by properly qualified graduate students under the direction of a faculty member.

597 • Individual Studies for M.S. Comprehensive Examinations and Ph.D. Examinations (1-12) Staff
Individual studies for M.S. comprehensive examinations and Ph.D. examinations. Maximum of 12 units per quarter. S/U grading. Instructor is normally student's major professor or Chairman of doctoral committee. No unit credit allowed toward advanced degree. Enrollment limited to 24 units per exam.

599 • Ph.D. Dissertation Research and Preparation (1-6) Staff
Prerequisite: Permission of chairman of student's doctoral committee. Research and preparation of dissertation.

Mechanical and Environmental Engineering

Professors

William T. Thomson, Ph.D., Berkeley; dynamic analysis, stochastic methods, earthquake engineering.
Thomas P. Mitchell, Ph.D., Cal-Tech; theoretical mechanics, electromagnetic theory, satellite dynamics (Chairman).

Associate Professors

William C. Kuby, Ph.D., Northwestern; high temperature gas phase kinetics, air pollution chemistry and transport, propagation of forest fires.
Roy S. Hickman, Ph.D., Berkeley; fluid mechanics, Raman spectroscopy, electron beam fluorescence, hypersonic gas dynamics, cryogenics.
John C. Bruch, Jr., Ph.D., Stanford; groundwater flow analysis, numerical solutions and analysis, computer simulation, pollutant movement.
Ekkehard P. Marschall, Dr. Ing., Technische Hochschule (Hannover); thermodynamics, heat and mass transfer, desalination, energy conversion.
[a]*Frederick Milstein,* Ph.D., UCLA; materials science, metallurgy, magnetism in solids, magnetic phase transformation, plastic deformation.
James P. Vanyo, Ph.D., UCLA; rotating nonrigid bodies, fluid dynamics, environmental systems, law and technology, design optimization.

Lecturers

Robert B. Roemer, Ph.D., Stanford; biomedical engineering, voice-controlled environmental control devices, instrumentation, mathematical modelling.
Harris Meisel, M.D., Pennsylvania; biomedical engineering, environmental control devices, prosthetic devices, rehabilitation medicine.

Concerns of the department

The purpose of the Mechanical and Environmental Engineering program is to prepare students for the practice of engineering at a professional level. The curriculum establishes a foundation in the physical and engineering sciences, mathematics, and the humanities. Students are prepared and encouraged to contribute creatively and with originality to the solution of contemporary industrial and societal engineering problems. In addition, the program provides an appropriate introduction to graduate-level engineering specialization.

Bachelor of Science

Schedules should be planned to meet the requirements in General Education and in the major. Detailed descriptions of these requirements are listed in this catalog under the heading "College of Engineering," and in the separate bulletin *College of Engineering Announcements.*

Preparation for the major

The following Lower Division courses are required (65 units): Engineering/3A—B; ME/10; Chemistry/1A—B—C; 1AL—1BL—1CL; Mathematics/3A—B—C; 5A—B—C; ME/15; EE/6A—B; Physics/7A—B—C; and 7BL—7CL.

Upper Division major

Upper Division required courses are (66 units): ME/140A—B; 150; 151A—B—C; 152A—B; 157A; 159; 159L; 163; 155; 156A; and 156AL—156BL—156CL, plus 10 units of departmental electives.

The Mechanical Engineering elective courses available permit students a degree of specialization in the areas of systems engineering, biomedical engineering, ocean engineering, aerospace engineering and environmental engineering.

A particular option in Environmental Engineering is available. It consists of courses which constitute a presentation of engineering fundamentals in air pollution, environmental acoustics, energy conversion, and water quality. This option prepares a mechanical engineer to be able to participate, with a high level of professional competence, in the solution of numerous problems of an environmental nature.

Master of Science

Requirements

1. As in the general requirements for admission to graduate status, the department requires a bachelor's degree of its equivalent from a school or college of recognized standing.

2. Applicants with undergraduate preparation that is deemed inadequate may be required to take additional courses.

3. The degree is administered under Plan I and Plan II. Plan I requires 30 units of course credit approved by the departmental director of graduate studies, with a minimum of 15 units in approved graduate engineering courses. The remaining credits may be chosen from 100, 200, or 500-level courses in mechanical engineering or other branches of engineering, mathematics or science, as approved by the Department. Each student in Plan I will pursue a research project which will be approved by the Mechanical Engineering Department, the results of which will be presented as a thesis.

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[a]Absent on leave 1975-76

Plan II requires 36 units of course credit approved by the departmental director of graduate studies, with a minimum of 24 units in approved graduate engineering courses. The remaining credits may be chosen from 100, 200, or 500-level courses in mechanical engineering or other branches of engineering mathematics or science as approved by the Department. The Plan II program will culminate in a written comprehensive examination, in the subjects studied.

Fields of study center in the disciplines of thermal sciences, solid mechanics, fluid mechanics, material sciences, design, engineering systems, and biomedical engineering.

Doctor of Philosophy

Requirements

Admission — Acceptance for admission to the Doctor of Philosophy program is subject to the general admission requirements of the Graduate Division. In addition, a Master of Science degree or equivalent and successful completion of the departmental screening examination, which is identical to the M.S. comprehensive examination, is required.

Preparation — The student must demonstrate competence in a major field by successfully passing a written examination. Competence in two minor fields, one of which may be outside the department, is also required. Completion of minor field requirements is obtained through acceptable course work performance as approved by the departmental graduate advisory committee.

Advancement to candidacy — The student will be advanced to candidacy after completing the major and minor field requirements and an oral qualifying examination in the major field of study.

Dissertation — The emphasis in the Ph.D. program is on the ability to correlate knowledge in the pursuit of original research. The results of the research shall be successfully defended by the student in an oral examination and presented as a dissertation in accordance with the regulations of the Graduate Division.

Career opportunities

The mechanical engineering profession possesses unusual flexibility and breadth. The individual mechanical engineer is a person who applies a fundamental knowledge of physical and engineering sciences, computational techniques, engineering design and education in the humanities to the solution of many problems in contemporary society. A mechanical engineer creates, designs and carries on research in fields as diverse as biomedical engineering, transportation systems, ocean engineering, space exploration, environmental engineering, energy conversion, the materials and petroleum industries, structural engineering and university-level education.

Teaching credentials

Either a major or a minor in Engineering may serve as an appropriate part of the program of studies required for a community college teaching credential in California. A student wishing to secure this credential should confer with designated counselors in the College of Engineering and in the Graduate School of Education.

Correspondence information

Undergraduate counseling: **Mary A. Rosa, Assistant Dean of Students, College of Engineering, University of California, Santa Barbara, California 93106.**

All other correspondence: **Chairman, Mechanical and Environmental Engineering, University of California, Santa Barbara, California 93106. Phone: (805) 961-2536.**

Mechanical and Environmental Engineering

Lower Division courses

10 • Introduction to Engineering Mechanics (4) Staff
Prerequisite: Mathematics/3A; Mathematics/3B may be taken concurrently; EE/5, or Engineering/3A—B, or equivalent computing background. Kinematics and dynamics of a particle. Forces and free-body diagrams. Momentum, work, energy and moment of momentum. Motion under electric, magnetic, gravitational and mechanical forces.

15 • Statics/Strength of Materials (4) Staff
Prerequisites: ME/10, Mathematics/5A. Hooke's law and properties of structural materials. Method of sections and virtual work and energy methods. Design applications to engineering structures, problems of tension, torsion, flexure and combined loading. Design beyond the elastic limit.

95 • Introduction to Mechanical Engineering (1) Staff
Prerequisite: Consent of instructor. Participation in design projects in the laboratory or machine shop. Projects may be student- or faculty-originated depending upon student interest and consent of faculty member. Assistance to senior design project groups may also be acceptable with consent of the project faculty adviser. May be repeated up to six units.

Upper Division courses

102 • Physical Properties of the Ocean (4) Staff
Prerequisite: Junior standing. Introduction to the world's oceans. Chemical composition. Pressure and temperature distribution. Waves, currents, tides. Mixing processes, turbulence, stratification. Shores and shore processes.

103 • Introduction to Marine Technology (4) Staff
Prerequisite: ME/102. Materials and corrosion. Pressure vessel technology. Surface ships. Submerged structures. Hydrostatics and hydrodynamics; cavitation. Dynamics of underwater vehicles. Propulsion and control. Life support systems. Communication.

105 • Introduction to Statistical Thermodynamics (4) Milstein
Prerequisites: ME/10 and mathematics of the Lower Division of the engineering curriculum. Elements of quantum mechanics and classical thermodynamics; thermodynamic equilibrium and entropy. Statistical nature of thermodynamics. Maxwell-Boltzmann, Fermi-Dirac, and Bose-Einstein statistics. Thermodynamic properties of matter. Paramagnetism, ionization, thermionic emission, free electron theory of metals, semiconductors.

110 • Engineering Systems and the Environment (3) Staff
Prerequisite: Junior standing in engineering, or equivalent. Sources of pollution (air, water, noise, thermal, radioactive) and resource waste. Short and long-range effects. Political, societal, and cost considerations. Mathematical models of processes and systems, and development of alternatives.

111 • Engineering Acoustics (3) Mitchell
Prerequisite: ME/152A or consent of instructor. Fundamentals of acoustics; physics of sound waves; architectural acoustics, reverberation, acoustical properties of materials, interaction of sound and structures; outdoor sound propagation; community noise levels and sources; transportation noise; noise and vibration level criteria; measurement techniques.

112 • Energy Conversion (3) Marschall
Prerequisites: ME/151A, 151B concurrently, or consent of instructor. Survey of energy resources of the earth, energy consumption, and energy conversion; resume of thermodynamics, quantum and statistical mechanics. Analysis of conventional vapor and gas cycles. Fundamentals, design, and application of direct energy converters such as fuel cells, magnetohydrodynamic power generators, thermoelectric generators, thermionic generators, photovoltaic generators, Nernst effect generators, electron convection converters, electrodynamic generators, electrokinetic and piezoelectric converters.

113 • Desalination (3) Marschall
Prerequisite: ME/151A, 151B concurrently, or consent of instructor. Chemical and physical properties of ocean water, geothermal brine, and ground-water. Fundamentals of theories of distillation, freezing, reverse osmosis, electrodialysis, and other demineralization techniques. Design and

application of desalination systems. Energy sources for desalination. Efficiency and economy of desalination plants.

114 • Water Pollution (3) Bruch
Prerequisite: ME/152A or consent of instructor. Water supply and quality requirements for domestic, industrial, agricultural, and recreational uses. Properties of natural surface and groundwaters. Pollutants in surface and groundwaters. Transport and fates of waterborne pollutants. Water and sewage treatment processes. Waste water reclamation. Water quality management in ground and surface water environments.

115 • Introduction to Air Pollution Principles (3) Kuby
Prerequisite: ME/151A or consent of instructor. Adverse affects, the atmosphere, macroscale motion, meso- and micrometeorology, effluent dispersal, sulfurous smog, photochemical smog, stationary sources and their control, emission formations in gasoline-powered engines, effects of design and operating variables on gasoline-engine exhaust emissions, and present and future emission control systems for gasoline engines.

125 • Special Topics in Mechanical Engineering (4) Staff
Prerequisite: Consent of instructor. Individual courses each concentrating on one area in the following subjects in mechanical engineering: design, fluid mechanics, heat transfer, combustion, structural dynamics, materials, biomechanics, and modern developments.

130 • Applied Hydro- and Aerodynamics (3) Staff
Prerequisite: ME/152A. Drag, lift, other fluid dynamic forces and moments. Performance. Elements of flight dynamics. Airfoils; wings; bodies. Numerical treatment by superposition of basic flows. Experimental and computer methods. Course is project-oriented.

132 • Trajectory and Orbital Mechanics (4) Staff
Prerequisites: ME/10, and mathematics of the Lower Division engineering curriculum. Fundamentals of particle dynamics; two-body and central force problems; orbit determination; transfer orbits; orbital perturbations; long-range ballistic trajectories; powered flight trajectories; reentry dynamics; lunar and interplanetary trajectories.

140A—B—C • Theoretical Analysis in Mechanical Engineering (3,3,4) Bruch
Prerequisite: Junior standing. Introduction to the mathematical models of engineering problems and the methods of solution, both analytical and numerical. Applications to practical engineering field problems.

150 • Introduction to Design (1) Staff
Prerequisite: Upper Division standing. Introduction to the design process. Conceptualization of a design project in preparation for course ME 156.

151A • Thermosciences (4) Marschall
Prerequisite: Upper Division standing. The basic laws and concepts of thermodynamics such as pressure, temperature, energy and entropy are discussed and their application to various systems are considered. Consideration is given to the molecular structure and physical properties of the solid, liquid, and gaseous states.

151B • Thermosciences (4) Marschall
Prerequisite: ME/151A. Application of basic thermodynamic principles and laws to energy conversion systems; gas mixtures; combustion; conduction heat transfer.

151C • Thermosciences (4) Marschall
Prerequisites: ME/151B, 152A, concurrent enrollment in ME/152B. The study of the fundamentals of heat transfer using the phenomena of conduction, radiation and convection; application and analysis of steady state, transient, and combined mode problems.

152A • Fluid Mechanics (4) Kuby
Prerequisite: Lower Division courses in engineering, physics and mathematics. Introduction to the fundamental concepts in fluid mechanics and basic fluid properties. Basic equations of fluid flow. Dimensional analysis and similitude. Hydrodynamics.

152B • Fluid Mechanics (3) Kuby
Prerequisite: ME/152A. Incompressible viscous flow. Boundary-layer theory. Introductory considerations for compressible flow. One dimensional and multidimensional compressible flow. Flow in open channels. Fluid machinery design.

155 • Control Systems Design (4) Staff
Prerequisite: ME/140A—B; EE/6A—B (may be taken concurrently). Study of linear feedback systems, transfer functions, stability, root locus, Nyquist diagrams, frequency response, and state space techniques. Design and synthesis of control systems.

156A • Engineering Materials and Design Concepts (2) Staff
Prerequisite: ME/159 or *consent of instructor.* Selection of engineering materials, failure theory, non-metallic materials, welding, machine shop procedure and the design of machine elements. Secondary not required of non-majors.

156AL • Engineering Materials and Design Concepts (2) Staff
Prerequisites: Concurrent enrollment in ME/156A and 150. Nature of engineering design. Carrying out of preliminary design. Continuation of design projects originated in ME/150.

156BL—CL • Design (4,4) Staff
Prerequisites: ME/156A—AL. Continuation of design projects begun in ME/156AL.

157A • Design of Optimal Systems (4) Vanyo
Prerequisites: ME/140A—B or consent of instructor. Application of operations research methods to the design, optimization, and use of engineering systems. Linear programming and its variations and dynamic programming are emphasized. Topics also include an introduction to game and decision theories and operations analysis using PERT. Project groups are formed to apply one technique in depth to an engineering design or to a technical-societal problem.

157B • Design of Optimal Systems (3) Vanyo
ME/157A is recommended before this course. Application of computer simulation methods to the design, optimization, and use of complex systems. The course surveys both technical and non-technical systems, discrete and continuous systems, and deterministic and probabilistic systems. Topics include generation of random numbers, typical simulation languages (e.g., GPSS, CSMP, DYNAMO), and validity testing, Project groups are formed to apply one technique in depth to a current local situation (e.g., a complex engineering design, an environmental problems, a traffic analysis, etc.).

158 • Kinetic Theory and Statistical Thermodynamics (4) Hickman
Prerequisite: ME/151A—B Theory, Maxwell-Boltzmann equilibrium distribution, specific heat, transport properties, and quantum statistics.

159 • Properties of Materials (3) Milstein
Prerequisite: Mathematics of the Lower Division of the engineering curriculum plus concurrent enrollment in ME/159L. Bonding in solids, crystallography, alloys, phase diagrams, and diffusion. Theory of plastic deformation and fracture of metals.

159L • Properties of Materials (1) Milstein
Prerequisite: SEE ME/159. Experiments in properties of materials. Plastic deformation, yield strength of alloys, annealing behavior of metals and alloys, electrical resistivity, and magnetic properties.

160 • Gas Dynamics and Propulsion (3) Kuby
Prerequisities: ME/151A—B, 152A—B Resume of fundamentals of gas dynamics, thermodynamics, and combustion. Subsonic and supersonic two-dimensional flows. Method of characteristics. Normal and oblique shocks. Analysis of compressible flow through ducts, nozzles, and in gas turbines, rockets, and ramjets.

161 • Vibrations in Linear Systems (4) Thomson
Prerequisite: Consent of instructor Topics relating to vibration in mechanical systems; exact and approximate methods of analysis, matrix methods, generalized coordinates and Lagrange's equations, applications to systems with several degrees of freedom and to continuous systems.

163 • Engineering Dynamics (4) Thomson
Prerequisite: ME/10 Kinematics of machine elements. Newton's laws, momentum, work, energy, and power. Vibration isolation, dynamic balancing. Relative motion of fluids in rotating machines. Dynamics of jet engines, rockets, and variable mass systems. Gyroscopic motion.

166 • Introduction to Theory of Elasticity (4) Staff
Prerequisite: ME/140A. Fundamentals of classical theory of elasticity and applications. Thermodynamics of deformation. Elastic properties of crystals. Equilibrium of beams, plates, and shells. Elastic wave propagation. Vibration of beams and plates.

170A • Introductory Biomedical Engineering (3) Roemer
Prerequisite: Senior standing in engineering. Survey of application of engineering principles and methods to problems arising in the life sciences (Medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design; etc.

170B—C • Biomedical Engineering (3,3) Roemer
Prerequisites: ME/170A and consent of instructor. Detailed investigation of specific biomedical engineering problems; tours of local medical facilities; demonstrations of physiological and medical instrumentation systems. Topics to be determined by progress in various fields of biomedical engineering.

180 • Law and Technology (3) Vanyo
Prerequisite: Junior standing in engineering or consent of instructor. Survey of modern law as a combination of common law, constitutional requirements, legislation, and administrative regulations. Interaction between law and technology in research and development, production and commerce, and business organizations. Combined legal-technical system approaches to current problem areas.

195 • Directed Research (1-4) Staff
Prerequisite: Consent of instructor. Directed research projects open to qualified undergraduates in Mechanical Engineering or related fields. Research projects are to be arranged by student and staff member. The course is designed to give unusual undergraduates early experience in research. Not acceptable for required departmental electives.

***199 • Independent Studies in Mechanical Engineering** (1-5) Staff
Directed individual study, normally experimental, open to students in the Department of Mechanical and Environmental Engineering who have completed a minimum of 84 units.

Graduate Courses

200 • Professional Seminar (1) Staff
Prerequisite: Graduate standing. A series of weekly lectures given by University staff members and outside experts in the fields of research or development pertinent to mechanical engineering.

201 • Advanced Dynamics (3) Vanyo
Prerequisite: ME/163 or equivalent. Advanced dynamics of mechanical systems; variational techniques; Hamilton's principle; Lagrange's equations; conservation theorems; matrix kinematics and dynamics of rigid bodies in general motion.

202 • Advanced Dynamics (3) Mitchell
Prerequisite: ME/201 or consent of instructor. Advanced dynamics of electromechanical systems; Hamilton's principle and Lagrange's equations generalized to electrical networks; analysis of electromechanical transducers; frequency response; introduction to canonical transformations; Hamilton-Jacobi equations.

203 • Nonlinear Mechanics (3) Thomson
Prerequisite: ME/201. To be offered in even numbered years except upon sufficient demand. Academic year 1976-77 will be an even numbered year. Phase plane analysis; criteria of stability; study of Van der Pol. Duffing, Mathieu equations: Poincare-Bendixson theorem: method of Krylov-Bogoliuboff; equivalent linearization perturbation methods.

[1]214 • Rotation of Nonrigid Bodies and Fluids. (3) Vanyo
Prerequisites: ME/201 and 221 or consent of instructor. Kinematics and dynamics of general rigid body motion. Extension to nonrigid bodies. Effects of energy dissipation on satellite attitude stability. Navier-Stokes equations in rotating coordinates and vorticity coordinates. Precessing boundary layer theory. Mixed system inertia tensors.

[1]216 • Stochastic Dynamics (3) Staff
Prerequisite: ME/201. Analysis of systems having stochastic solutions or inherent random parameters. Measurement and analysis of random data; stationary, ergodic, and nonstationary random processes; power spectra, analog and digital data processing, filtering; Monte Carlo methods, stochastic stability, Fokker-Planck equation. Application to random vibration, earthquake excitation, and ocean wave excitation.

219 • Continuum Mechanics (3) Bruch
Prerequisite: ME/152A—B or equivalent. Matrices and tensors; stress deformation and flow; compatability conditions; constitutive equations; field equations and boundary conditions in fluids and solids; applications in solid and fluid mechanics.

220 • Inviscid Flow (3) Hickman
Prerequisite: ME/219, concurrently. Two-dimensional and axisymmetric flows. Stream functions. Vorticity and circulation. Stockes, Gauss, vortex theorems. Irrotational motion. Velocity potential. Basic solutions and superpositions; distributed singularities. Conformal mapping.

221 • Viscous Flow (3) Hickman
Prerequisites: ME/219, 220. Navier-Stokes equations, vorticity equation. Exact solutions. Flow at low (Stokes, Oseen) and at high Reynolds number. Boundary layer equations; similarity solutions, approximate solutions; numerical methods. Stability of laminar flows and transition to turbulence.

[2]222 • Compressible Flow (3) Staff
Prerequisites: ME/151A—B or equivalent, ME/219. Review of one-dimensional and oblique shock waves. Prandtl-Meyer expansion. Method of characteristics for two-dimensional steady, one-dimensional unsteady and axisymmetric flow. Croccos' Theorem. Viscous compressible boundary layer.

[1]224 • Physical Gas Dynamics (3) Kuby
Prerequisites: ME/222 and 251. Behavior of equilibrium and nonequilibrium gas flows at very high temperatures including vibrational, translational, chemical and radiative effects.

225 • Special Topics in Mechanical Engineering (4) Staff
Prerequisites: Advanced background and consent of instructor. Individual courses, each concentrating on one of the following subjects in fluid and solid mechanics: boundary layers, turbulent flow, real fluids, physical gas dynamics plasma dynamics, combustion, gyro-dynamics, structural dynamics, stability, materials, biomechanics, modern developments.

[1]226 • Applied Numerical Methods for Engineering (4) Bruch
Prerequisite: ME/140A—B or consent of instructor. Interpolation and approximation. Numerical integration. Iteration. Solution of equations and systems of algebraic equations. Numerical solution of ordinary differential equations. Finite difference, weighted residuals and finite element methods for the solution of partial differential equations.

[2]231 • Plasma Dynamics (3) Mitchell
Prerequisites: ME/219 and consent of instructor. Particle and fluid description of plasma; Maxwell's equations; Alfven's theorem; equilibrium configurations; one-dimensional flows; magneto-hydrodynamic waves; shock waves; stability.

[2]234A—B • Structural Dynamics (3,3) Staff
Prerequisite: ME/163 or equivalent. Behavior of elastic systems; system constraints; normal modes; virtual work method; generalized coordinates; Lagrange's equations; influence functions; matrix methods; damping; frequency response; random excitation.

[1]235A—B • Quantum Mechanics (4,4) Mitchell
Prerequisite: Consent of instructor. Basic particle quantum mechanics; state vectors, mathematical and physical development; solutions of Schrodinger's equation; one dimensional applications; two state systems; spin; Heisenberg's formulation; fundamental dynamics; angular momentum; three dimensional applications; perturbation theory; identcal particles; radiation.

239 • Conduction Heat Transfer (3) Marschall
Prerequisite: Undergraduate course in heat transfer. Development of mathematical representation of conduction heat transfer and techniques available for analytical, analog and numerical solutions.

240 • Convective Heat Transfer (3) Roemer
Prerequisite: Undergraduate course in heat transfer. Solutions to the momentum, continuity and energy equations will be considered for both natural and forced convection. Applications to industrial problems, convective transfer in high-speed flows, heat transfer in rarefied flows and the effects of chemical reactions on convective rates will be included.

[2]241 • Radiative Energy Transfer (3) Staff
Prerequisite: Undergraduate course in heat transfer. The physical nature of radiation and of its interaction with matter; conservation principles in radiative transfer and their relation to molecular and convective processes; and thermodynamic equilibrium with consideration of nondimensional parameters will be considered. Applications to astrophysics, combustion and plasma technology will be discussed.

250 • Advanced Thermodynamics (3) Staff
Prerequisite: ME/151A—B. An extended treatment of the fundamentals of classical thermodynamics, including availability and reversibility, the chemical potential, properties of matter, thermochemistry, chemical equilibrium of real gases and gas mixtures.

251 • Statistical Thermodynamics (3) Staff
Prerequisite: ME/151A—B. An extended treatment of the fundamentals of statistical thermodynamics, equilibrium distributions, properties of gases, liquids and solids.

260A—B • Engineering Materials (3,3) Milstein
Prerequisite: Graduate standing in engineering or consent of instructor. Introduction to modern concepts in materials science; application of solid state and thermodynamic theory to the study of properties of materials of technological interest. Elastic and plastic deformation; imperfections; alloying theory; paramagnetism and ferromagnetism; thermal properties of materials (specific heat, electron emission); superconductivity.

261A—B—C • Seminar in Materials Research (2) Milstein
Prerequisite: Consent of instructor. Seminars on research subjects of current interest in electrical, magnetic, mechanical, and thermal properties of materials. Student participation in presentation of seminars. May be repeated.

270A • Transport Phenomena in Biomedical Engineering (3) Roemer
Prerequisite: Graduate standing in Engineering, ME/170A, Zoology/40, or consent of instructor. Consideration of the transport phenomena (heat, mass momentum, and electric charge) in the major physiological systems (cardiovascular, respiratory, metabolic and nervous) and associated engineering devices. Emphasis on the physical basis of the transport processes and the mathematical description of those processes.

270B • Transport Phenomena in Biomedical Engineering (3) The Staff
Prerequisites: ME/270A, 155 or equivalent, or consent of instructor. Analysis of the major physiological control systems from the engineering viewpoint. Emphasis on mathematical modeling and analyses.

271 • Seminar in Biomedical Engineering (2) Roemer
Prerequisite: ME/270B or consent of instructor. Seminar on the application of engineering principles to medical problems and physiological processes. Consideration of advanced topics depending on student and faculty interests, e.g., modeling and simulation of physiological systems, biomechanics, rehabilitation engineering. Clinical and laboratory facilities will be utilized when appropriate. Student participation in presentation of seminar. May be repeated.

594AA—ZZ • Special Topics (1-4) Staff
Prerequisite: Graduate standing.

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*See L-2 for 198/199 independent studies unit limitations.

[1] To be offered in odd-numbered years except upon sufficient demand. Academic year 1975-76 is an odd-numbered year.

[2] To be offered in even-numbered years except upon sufficient demand. Academic year 1976-77 will be an even-numbered year.

595AA—ZZ • Group Studies (1-4) Staff
Prerequisite: Graduate standing.

596AA—ZZ • Directed Reading and Research (1-6) Staff
Prerequisite: Graduate standing and consent of instructor.

597 • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-12) Staff
Prerequisite: Graduate standing.

598AA—ZZ • Master's Thesis Research and Preparation (1-12) Staff
Prerequisite: Graduate standing.

599AA—ZZ • Ph.D. Dissertation Research and Preparation (1-12) Staff
Prerequisite: Graduate standing.

English

Professors

Edgar Bowers, Ph.D., Stanford; English and American/Poetry.
Joseph Foladare, Ph.D., Yale; *(Emeritus).*
William Frost, Ph.D., Yale; English and comparative literature (Chairman).
Earl Leslie Griggs, Ph.D., D. Litt., University of London *(Emeritus).*
Donald L. Guss, Ph.D., Wisconsin; English literature, 1500-1660, Italian Petrarchism, renaissance literary history.
Edward Loomis, Ph.D., Stanford; creative writing, American literature, film production.
J. Chesley Mathews, Ph.D., Berkeley *(Emeritus).*
Patrick J. McCarthy Ph.D., Columbia; nineteenth-century English literature, the novel.
Vivian Mercier, Ph.D., Trinity College, Dublin; Anglo-Irish literature, French-Irish literary relations.
Marvin Mudrick, Ph.D., Berkeley; Chaucer, fiction.
Donald Pearce, Ph.D., Michigan; romantic poets, W. B. Yeats.
[1]*Alan Stephens,* Ph.D., Missouri; poetry, modern English and American literature.
Douwe Stuurman, B. Litt, Oxford *(Emeritus).*
[3]*Homer Swander,* Ph.D., Michigan; Shakespeare, modern drama.
Lawrence Willson, Ph.D., Yale; Puritanism and pornography: tales of human frailty and sorrow.

Associate Professors

[3]*H. Porter Abbott,* Ph.D., Toronto; the novel.
Sheridan Blau, Ph.D., Brandeis; seventeenth-century literature, English education.
Frank C. Gardiner, Ph.D., Oregon; English literature, medieval studies.
[2]*William S. Marks III,* Ph.D., Stanford; nineteenth-century American fiction, modern British and continental fiction.
[1]*Stephen J. Miko,* Ph.D., Yale; modern novels.
John Ridland, Ph.D., Claremont Graduate School; writing, poetry, teaching of writing and poetry.
[3]*Herbert N. Schneidau,* Ph.D., Princeton; modern literature, the Bible.
Logan H. Speirs, M.A., Cambridge; English and comparative literature.
[1]*Thomas R. Steiner,* Ph.D., Columbia; seventeenth and eighteenth-century literature.
[3]*Everett Zimmerman,* Ph.D., Temple; eighteenth-century satire, the novel.

Assistant Professors

Steven Allaback, Ph.D., Washington; American literature, creative writing.
Russell Astley, Ph.D., Temple; renaissance.
Watson G. Branch, Ph.D., Northwestern; American literature.
Walter Davis, Ph.D., Chicago; literary theory, philosophy and literature.
Edward T. Duffy, Ph.D., Columbia; nineteenth century.
Michael Fishbein, Ph.D., Yale; nineteenth and twentieth-century English literature, Bible as literature.
Christopher F. Givan, Ph.D., Stanford; Shakespeare, creative writing.
Melvyn Haberman, Ph.D., Harvard; nineteenth and twentieth-century British literature, modern American literature, film studies.
Richard Helgerson, Ph.D., Johns Hopkins; Shakespeare, the English renaissance.
Anne Kernan, Ph.D., Cornell; medieval literature.
Michael W. O'Connell, Ph.D., Yale; renaissance poetry and drama.
H. Daniel Peck, Ph.D., Iowa; American literature.
[1]*Jonathan Ramsey,* Ph.D., UC, Riverside; romantic and early-modern literature.

Lecturers

Robert P. Brandts, M.A., CSU, Long Beach; creative writing, African literature, approaches of poetry and the semi-colon.
Robert A. Erickson, Ph.D., Yale; seventeenth and eighteenth-centuries.
Elliott Evans, M.A., Chicago; Afro-American literature, contemporary European literature, teaching methodology and approaches to teaching expository writing.
Michael A. Fernandez, M.A., CSU, San Francisco; writing — fiction/non-fiction, creative writing.
Mark Ferrer, M.A., UCSB; creative writing, comparative literature.
Anne Pidgeon, M.A., Michigan; Freshman Program.

Concerns of the department

The Department of English (1) provides all undergraduates with the opportunity for guided literary study, through the 1A and 1B courses; (2) makes available to all students a wide range of courses that may be taken for credit as electives; (3) offers a major leading to the Bachelor of Arts degree; (4) offers graduate programs leading to the M.A. and Ph.D. degrees; and (5) collaborates with the Departments of Foreign Languages and Literatures in the Comparative Literature undergraduate major program.

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[1] Absent on Leave Fall 1975
[2] Absent on Leave Winter 1976
[3] Absent on Leave Spring 1976

The English Major pursues a planned program of English courses and cognate studies from which a sound and orderly knowledge of our literature and the wisdom and exhilaration available in it, as well as a poised critical sense and some ability in graceful and efficient expression, can be acquired.

Counseling All students are urged to confer with one of the departmental undergraduate advisers at the time of declaring the English major, and must consult an adviser about their academic program at least once before their senior year. Appointments to meet advisers should be arranged with the English Department's Undergraduate Secretary.

Students interested in a major in Comparative Literature (English plus a foreign literature) may consult specially designated undergraduate advisers in the English Department.

Bachelor of Arts

Preparation for the major

To prepare for the major the student must pass courses 1A—B or equivalent, Classics/37, 38, 40 or 102, English/20, 30, and 40, with an average grade of C or higher, and History/4A—B—C. (Upper Division majors may satisfy the History requirement by substituting one of the following sequences: History/111A—B, 113A—B, 115—116, 140A—B, or 141A—B.)

Foreign Language Requirement. English majors may fulfill the language requirement by completing either 1) the sixth course or its equivalent in Greek, Latin, French, German, Italian, Russian or Spanish; or 2) five literature courses, of which three must be Upper Division foreign literature or literature in translation courses. Students who wish to follow the second option must consult with a department adviser at the end of the sophomore year in order to establish a plan of study (petition required). In selecting the option, the student should keep the following in mind: a) election to Phi Beta Kappa requires option 1) above; b) students contemplating graduate study should consult the prospective graduate schools regarding their language requirements.

Upper Division major

For the Upper Division program, the student must take twenty units in the following courses, as far as possible in the order listed: English/**117A—117B (Shakespeare), 162 (Milton), 152A (Canterbury Tales),** and **197 (Senior Seminar).** Twenty units in electives will be required within the Department. (102A—102B—102C, 106G, 117E, and 183 may not be used to fulfill requirements for the major.)

History/**140A—B (History of England)** is strongly recommended for all English majors.

Graduate Programs

The Department requests that applicants submit a paper written in an Upper Division English course with their applications.

The department recommends but does not require that the candidate present scores on the Graduate Record Examination.

Master of Arts

Requirements

Courses

Plan A: (primarily for students who are also candidates for the Secondary Credential and who do not plan to go beyond the M.A.). 36 units, including a minimum of 28 graduate units of which no more than eight may be in 297 and, with permission of the Graduate Committee, no more than four in 596. All students are required to take English/200, and to demonstrate a basic knowledge of the history of the English language. The second part of this requirement may be satisfied by (1) a course approved by the Graduate Committee; or (2) an examination administered normally in the Winter Quarter by the Graduate Committee.

Plan B: (for students who have been admitted to the program leading to the Ph.D.) Same as Plan A, except that, all 36 units must be in graduate courses. All students should plan their programs in consultation with their Graduate Adviser. Programs should not be filed without the adviser's approval.

It is strongly urged that students in their first year of graduate study register for studies courses rather than for seminars. (Consult the quarterly brochure of the department for the list of courses available.) The content of both studies courses and seminars will vary from quarter to quarter. These courses may, therefore, be repeated for credit.

Examinations

Language: Students must consult with the Graduate Adviser for Languages before taking an examination.

All candidates must pass, as early as possible and in no case later than one quarter before receiving the M.A., a reading examination in French, German, Italian, Russian, Spanish, Latin or Greek. (This requirement must be fulfilled by the presentation of an ETS score for those languages in which ETS **Oral examinations:** *Plan A:* The candidate must pass, ordinarily during the quarter in which it is expected that the M.A. will be conferred, but in no case later than the end of the seventh quarter in residence, an oral examination of approximately one hour, in which the candidate should expect that major authors, genres, and literary periods will be covered. A candidate whose educational objectives have changed since being admitted to graduate study and whose record provides the justificiation may be permitted to take the Plan B oral examination; to do so, the student must receive permission from the Graduate Committee.

Plan B: The candidate must pass, at the same point as for Plan A, essentially the same kind of oral examination as that described above, except that, since it will serve as the first qualifying examination for the Ph.D., it will be more extensive; it will last approximately two hours. The examining committee will make one of the following recommendations: (1) Fail; (2) Pass as M.A. candidate, but without permission to continue; (3) Pass, with permission to continue. In all cases, recommendations are reviewed by the Graduate Committee.

Students must consult their Graduate Adviser before requesting any qualifying oral examination.

Doctor of Philosophy

Requirements

Completion of the M.A. degree under Plan B

Candidates who enter with M.A. degrees from other institutions must pass the first qualifying oral examination (described above, under Oral Examinations, Plan B); they may request the examination as early as their first quarter in residence, but in no case later than the end of their first year. For the language requirement a student entering with an M.A. degree from another institution must supply an ETS score or submit to re-examination no later than one quarter before requesting the first qualifying examination.

Courses

Two two-quarter seminars are to be taken between the first and second qualifying examinations (students are also encouraged to take other courses in their areas of concentration). The Graduate Committee will accept no more than eight approved units of 596.

Examinations

Language: Students must consult with the Graduate Adviser for Languages before taking an examination. Before being advanced to candidacy, the student must fulfill either language option (a) or language option (b).

Language option (a): An examination testing the student's ability to read plain prose text in any three of the following languages: French, German, Italian, Russian, Spanish, Latin, Greek and Old English. (This requirement must be fulfilled by the presentation of an ETS score for those languages in which ETS examinations are offered.) Another language may be substituted with the consent of the Graduate Committee and the Graduate Dean. (In the case of Old English, two quarters of course work with a grade of *B* or better may substitute for the examination.) After such an examination, the student will be expected to demonstrate an advanced knowledge of one of these languages, based on an acquaintance with a major literary text or group of texts in the original. This requirement may be satisfied by passing within five years prior to advancement to candidacy, with a grade of *B* or better, an Upper Division or graduate literature course in the language, or by passing a special examination. (In the case of Old English, a third quarter's work, with a grade of *B* or better, will satisfy the requirement.) The student must satisfy the language requirement before taking the second qualifying oral examination.

Language option (b): A demonstration of advanced knowledge of two languages (one of which may be Old English if the Graduate Committee consents). These languages shall have some relevance to a proposed course of doctoral study. Advanced knowledge will be demonstrated as in language option (a).

In certain cases, with the advice of the Graduate Adviser for Languages and the approval of the Graduate Committee, a student who can read one foreign language fluently will be permitted to satisfy the language requirement by demonstrating an ability to translate and interpret a wide range of literary texts in that language. A written examination will normally be required.

Oral examination: The second qualifying examination, of approximately two hours, will cover three areas of concentration: periods (e.g., the eighteenth century), individual authors (e.g., Shakespeare), or special topics (e.g., theories of poetry). After consultation with the Ph.D. Adviser, candidates must submit their lists — at least one quarter before requesting examination — for the approval of the Graduate Committee. All candidates must take this examination no later than the end of their fourth year of residence.

The Dissertation

After passing the second qualifying examination — or before, if it is possible and practicable — each candidate must submit, for the approval of the examining committee, a proposal for a dissertation. When approval has been granted, the candidate will write the dissertation under the guidance of the committee. If the committee so recommends, the completed work must be defended in a further oral examination.

Teaching credentials

Students who complete a major in English may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program.

Students interested in a community college instructors credential and the related professional preparation program should contact the education-advising office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Career opportunities

In addition to careers involving teaching, writing and publishing, the English major will find himself particularly well-qualified for admission to law school. English is also a satisfactory and often recommended major for pre-medical and pre-dental students. It is also an excellent preparation for a career in business or government.

Correspondence information

Correspondence may be addressed to the Department of English, University of California, Santa Barbara, California 93106. Telephone: (805) 961-3441.

English

Lower Division courses

A more detailed description of English courses (and texts) for the next term is normally available during pre-enrollment in the English Department office. Ask for the Course Outline Booklet.

English/1A and 1B *or their equivalents are prerequisites to all other English courses!*

1A—1B • First Year Reading and Composition (4,4)
Prerequisite: Satisfaction of Subject A requirement. 1A is a prerequisite to 1B.
English/1A: will be devoted to non-fictional prose and prose fiction, with heavy emphasis on expository writing.

English/1B involves intensive reading of poetry and drama and continued emphasis on expository writing.

FS • Freshman Seminar (4)
Students interested in taking Freshman Seminar should consult the Department's Course Outline Booklet for their availability.

20 • The Literature of the Renaissance (4)
A survey of English literature of the period 1500-1660, excluding Shakespeare and Milton. For English majors. English/20 should normally be taken before English/30 and 40. Continuing emphasis will be placed on developing writing skills in 20, 30, 40.

30 • The Literature of the Restoration and Eighteenth Century (4)
A survey of English literature of the period 1660-1800. For English majors. English/30 should normally follow English/20 and precede English/40. Continuing emphasis will be placed on developing writing skills in 20, 30, 40.

35 • Introduction to the Study of Poetry (4)

36 • Introduction to the Novel (4)

37 • Introduction to Drama (4)

38 • World Literature — Ancient (3) (SS. Only)
Close reading in translation of selected authors, such as Homer, the Greek dramatists, Plato, Virgil. Satisfies English major requirement in Classics.

39 • World Literature — Medieval through Eighteenth Century (4)
Reading in translation, of selected authors such as Dante, Cervantes, Montaigne, Voltaire.

40 • The Literature of the Nineteenth Century (4)
A survey of English literature of the period 1800-1900. For English majors. English/40 should normally be taken after English/20 and 30. Continuing emphasis will be placed on developing writing skills in 20, 30, 40.

41 • Creative Writing (4)
Writing in forms chosen by the student, such as short story, poetry, one-act play, autobiography and essay. May be repeated once for credit.

42 • Practice in Writing (4)
A nonfictional writing course in which the emphasis will be on the students' own papers.

46A—B—C • Survey of English Literature (4,4,4)
For minors and other non-majors. Not to be counted toward English major.
46A • Chaucer to 1660.
46B • Restoration and Eighteenth Century, including Milton.
46C • Nineteenth and Twentieth Centuries. (46B is not prerequisite to 46C.)

48 • Modern Continental Literature (4)
Reading in translation, of selected modern authors such as Flaubert, Tolstoy, Dostoevsky, Proust, Valery, Rilke, Kafka, Lorca.

Upper Division courses

102A—B—C • Major British Writers (4,4,4)
For upper division minors and other non-majors. Not to be counted toward the English major.
102A • Chaucer through Milton.
102B • Dryden through Keats. *(102A is not prerequisite to 102B.)*
102C • Tennyson to the present. *(102B is not prerequisite to 102C.)*

103 • Writing of Fiction (4)
Prerequisite: Consent of instructor. May be repeated for credit up to 12 units.

104 • Writing of Verse (4)
Prerequisite: Consent of instructor. May be repeated for credit up to 12 units.

105 • Creative Writing (4)
Prerequisite: Consent of instructor. All forms. May be repeated for credit up to 12 units.

106G • Writing of Non-Fictional Prose (4)
Required of candidates for the Elementary and Secondary teaching credentials in order to satisfy the State requirement of an upper division expository writing course. Under certain circumstances, students may be exempted from the course requirement by taking an examination. Other substitutes for this course must be approved by the English Department credential adviser. May not be counted toward the English major.
Non-Letters and Science Course (See G-4)

107 • Practical Criticism (4)
Prerequisites: 24 units in English; English major or minor. A combined writing and criticism course for advanced students of literature and prospective English teachers; special attention given to teaching others to write. Recommended for prospective teachers of English.

110 • The Structure of Modern English (4)
Introduction to applied English linguistics. Sounds, forms, syntax and vocabulary of contemporary Standard American English. Applications of linguistic theory to the teaching of composition and literature.

111 • The History of the English Language (4)
The structure and vocabulary of English from its earliest recorded forms to the present.

113 • Literary Theory and Criticsm (4)
Exploration of the critic's methods and objectives; study of selected major critical documents from Aristotle to the present.

114 • American Literary Criticism (4)
Detailed study of basic texts establishing American literary criticism as a major voice in literary study.

115 • Medieval Literature (4)
English and Continental literature through the fifteenth century, exclusive of *The Canterbury Tales*.

116 • The English Bible as Literature (4)

117A • Shakespeare, Poems and Earlier Plays (4)
Major poems and plays of Shakespeare written, acted, or published during the period 1593-1602, including *Hamlet*.

117B • Shakespeare, Later Plays (4)
Prerequisite: 117A. Major works of Shakespeare from 1603-1613.

117C • Shakespeare, Advanced Studies (4)
Prerequisite: 117A—B. Also offered for three units, with no prerequisite, as a field course in England in conjunction with Dramatic Arts/117. It may then be used towards satisfying the departmental requirement for majors.

117D • Shakespearean Renaissance Academy (8)
(Summer Session only).
An intensive course in Shakespeare and the Renaissance hosted by the Institute of Renaissance Studies at Ashland, Oregon. Of the eight units credit, four may be used to satisfy English/117A—117B.

117E • Shakespeare (4)
For non-majors.

120 • Modern Drama (4)
European and American drama from Ibsen to the present.

121 • American Drama (4)

124 • Readings in the Modern Short Story (4)

125 • Eighteenth-Century Fiction (4)
Such writers as Defoe, Richardson, Fielding, Smollett, Sterne.

126A—B—C Nineteenth-Century Fiction (4)
Students may take any one of these three courses, or they may take 126A and 126B. However, 126C may not be combined with either of the others.
126A • Nineteenth-century fiction to 1850
126B • Nineteenth-century fiction from 1850 to the end of the century
126C • A general survey of nineteenth-century fiction

128 • Autobiography In America (4)
Detailed readings of autobiographical writings in various modes — prose, fiction, poetry: Franklin, James, Adams, Whitman.

129 • Religious Themes in American Literature (4)
Survey and detailed study of various modes — poetry, prose, fiction— from Colonial days to the present.

130 • Survey of American Literature (4)
Such writers as Hawthore, Emerson, Melville, Whitman, Henry James.

131 • Special Studies in American Literature (4)
A special studies course in American literature. Topics will vary from quarter to quarter. To see what is being taught any particular quarter, students should consult the Department's *Course Outline Booklet*.

132A • Junior-Senior Studies in American Authors — Hawthorne & Melville (4)
As many works by both authors as the term permits.

132B • Junior-Senior Studies in American Authors — Henry James (4)
As many works of James as the term permits.

132C • Junior-Senior Studies in American Authors — Mark Twain (4)
As many works of Twain as the term permits.

132D • Junior-Senior Studies in American Authors — Hemingway (4)

132E • Junior-Senior Studies in American Authors — Faulkner (4)
Designed primarily for juniors and seniors whose major subject is English, but open to qualified upper-classmen in other majors.

133A • Literature of the American South (Exclusive of Faulkner) (4)
A selection from such writers as Cable, Twain, Glasgow, Caldwell, McCullers, O'Connor, Welty.

133B • Literature of California and the West (4)
Selections from such writers as Dana, Harte, Norris, Grey,

Rolvaag, Cather, Steinbeck.

133C • American Regional Literature (4)
Selections from such writers as Kate Chopin, M. E. W. Freeman, Jewett, Murfree, E. W. Howe, Garland.

133D • Literature of Urban America (4)
A selection from such writers as Howells, James, Crane, Wharton, Lewis, Bellow.

133E • American Jewish Literature (4)
Such writers as Henry Roth, Philip Roth, E. L. Wallant, Bellow, Singer, Malamud, Salinger.

135 • The Puritan Tradition in American Literature (4)
The development of the main ideas of American Puritanism.

136 • American Non-Fictional Prose Until 1900 (4)
Such writers as Mather, Edwards, Emerson, Thoreau, Henry Adams.

137A • American Verse Before 1900 (4)
Poets such as Taylor, Bryant, Whittier, Longfellow, Poe, Emerson, Whitman, Emily Dickinson.

137B • American Verse Since 1900 (4)
Survey and detailed study of such writers as Robinson, Eliot, Williams, Moore, Tate, Frost, Roethke.

138A • American Fiction Before 1860 (4)
Such writers as Brockden Brown, Irving, Hawthorne, Melville.

138B • American Fiction, 1860-1917 (4)
Such writers as Howells, James, Twain, Norris, Dreiser, London.

139 • American Fiction After 1917 (4)
Such writers as Fitzgerald, Hemingway, Faulkner, Roth, Updike.

140 • Realism and Naturalism in the American Novel (4)
A study of the American novel from the critical perspective which the artists such as Howells, James, Dreiser and Crane themselves have discussed.

141 • American Literature and the American Environment (4)
A study of the literary response to the American landscape. Readings and discussions of various American novelists, poets and men-of-letters who are particularly sensitive to their environment. Students will have an opportunity for refining their perception of the environment through the medium of creative writing. **(This course is the same as Environmental Studies/141.)**

142 • Dante in English Translation (4)
Reading of the *Divine Comedy.*

143 • English Literature and Literary Genres (4)
A course in a single genre such as tragedy, comedy, satire, allegory, epic. May be repeated with permission of department chairman.

144 • The European Renaissance (4)
Such authors as Petrarch, Boccaccio, Rabelais, Montaigne, Erasmus, More and Machiavelli.

145 • Special Studies in English Renaissance Literature (4)
A special studies course in the English literature of the period from 1500 to 1660. Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the Department's *Course Outline Booklet.*

146 • English Renaissance Verse and Prose (4)
An Upper Division survey of English non-dramatic verse and prose from the years 1500 to 1660.

147 • British Fiction Since 1900 (4)
Such writers as Conrad, Bennett, Joyce, Lawrence, Forster, Virginia Woolf.

148 • The Flaubertian Tradition in Fiction (4)
Ford Madox Ford, James Joyce, Samuel Beckett and others.

149 • Gaelic Backgrounds to Anglo-Irish Literature (4)
Translations of poetry, folktales, sagas and mythological works from early and modern Irish. These will be read both for their own fascination and for their influence on such writers as Yeats, Joyce, Synge and O'Casey.

150 • Anglo-Irish Literature (4)
A study of 20th-century Irish literature written in English against a background of Irish history during the struggle for independence and later. Major emphasis on Yeats, Joyce, Synge and O'Casey; other writers of the period, such as Stephens, O'Flaherty, O'Connor and Behan will also be touched on.

151 • Junior-Senior Studies (4)
Designed primarily for seniors whose major subject is English, but open to qualified upperclassmen in other majors. (151B1, Blake; 151D, Donne and Jonson; 151DL, Descriptive Linguistics; 151Dr, Dryden; 151J, Samuel Johnson; 151L, Lawrence; 151P, Pope; 151RF, Richardson and Fielding; 151S, Spenser; 151SW, Swift; 151W, Wordsworth; 151Y, Yeats).

152A • Chaucer: Canterbury Tales (4)

152B • Chaucer: Troilus and Criseyde and the Minor Poems (4)

153 • Yeats, Pound, Eliot (4)

154 • British and American Verse Since 1900 (4)
A course in British and American verse since 1900. May be repeated for credit with the permission of the Chairman.

155 • The Symbolist Movement (4)
A course on the symbolist movement in France and England.

157 • English Renaissance Drama (4)
A course in the English drama of the period from 1500 to 1642, excluding Shakespeare.

162 • Milton (4)

165AA—ZZ • Special Topics in Literature (4)
Studies of topics not limited to a specific author, period or literary form. Specific course titles will be announced prior to the beginning of each quarter. Course may be repeated an unlimited number of times, provided the letter designations are different. Only eight units of major credit will be allowed.

168 • Restoration and Eighteenth Century Verse and Prose (4)
An Upper Division survey of English non-dramatic verse and prose from the years 1660 to 1798.

169 • Restoration and Eighteenth-Century Drama (4)
Such dramatists as Dryden, Etherege, Wycherley, Congreve, Sheridan.

170 • The Age of Satire (4)
Donne, Rochester, Dryden, Swift, Pope, Johnson.

172 • Special Studies in the Enlightenment (4)
A special studies course in the neo-classical literature of England and the Continent.

177 • The Age of Romanticism (4)
English and Continental literature of the Romantic Movement.

178 • Nineteenth-Century Prose (4)
Romantic and Victorian writers, such as Coleridge, Hazlitt, Arnold, Carlyle.

179 • Romantic Poetry (4)
Such poets as Wordsworth, Coleridge, Byron, Shelley, Keats.

180 • The Victorian Era (4)
An Upper Division survey of English literature from the years 1837 to 1901.

181 • Special Studies in the Nineteenth Century (4)
A special studies course in the Romantic and Victorian periods. Topics will vary from quarter to quarter. To see what is being taught any particular quarter, students should consult the Department's Course Outline Booklet.

183 • Poetry and Song (3)
Prerequisite: Consent of instructor.

184 • Modern European Literature (4)
Such authors as Dostoyevsky, Tolstoy, Proust, Kafka, Mann and Sartre.*(Fall Quarter, 1975 this course will be the same as German/159E.)*

185A—B—C • Seminar in Modern European Literature (4,4,4)
Prerequisite: Consent of instructor. Close study of a major modern European author in translation. Subject will vary with instructor. Three-quarter seminar; *all three quarters required.*

186 • The Mythological Consciousness (4)
An introduction to, and evaluation of, conceptual approaches to myth in general and the influence of these approaches to literature. Not a survey of classical myth (see Classics/40).

187 • Special Studies in Modern Literature (4)
A special studies course in modern literature. Topics will vary from quarter to quarter. To see what is being taught any particular quarter, students should consult the department's *Course Outline Booklet.*

188 • Literature and Other Arts (4)
Literary works studied in the context of relevant movies, operas, paintings or other forms of artistic expression. To see what is being taught any particular quarter, students should consult the department's *Course Outline Booklet.*

189 • Literature of the Sixties and Seventies (4)
Drama, fiction, poetry of the last ten or fifteen years.

190 • Ethnic Literature (4)
Writings in English by natives of such countries as India and Ghana, and by American Negroes, Indians and Mexican-Americans.

191 • Readings in Afro-American Literature (4)
An examination of the literature and major Afro-American writers. Particular emphasis will be placed upon the psychic and cultural contexts in which the Black American writer creates and the special critical approaches needed to explicate his works. Writers such as Chesnutt, Dunbar, Contemps, Ellison, Baldwin and Wright will receive special attention.

194 • Group Studies for Advanced Students (2-4)

Prerequisites: Upper Division standing, consent of the instructor and the department chairman. Designed to meet special curricular problems. May be repeated once for elective credit in the major. Enrollment normally limited to 12 or fewer students.

196 • Honors English (4)
Prerequisite: Consent of department chairman. An undergraduate seminar for Honor students. Topics carefully selected to present both breadth and depth.

197 • Senior Seminar (4)
Prerequisite: Senior standing. An undergraduate seminar limited to senior English majors or juniors with consent of the instructor. Content will vary with each instructor. One quarter is required; may be repeated once for additional credit.

***199 • Independent Studies In English** (1-5)
Reading and conference for students with upper standing. 199 courses are limited to no more than five units in one quarter and no more than 12 units total.

Graduate courses

200 • Methods of Literary Study (4)
(formerly 208)

201 • Literary Criticism: Plato to Jonson (3)
(formerly 217)

202 • Literary Criticism: Dryden to the Present (3)
201 is not prerequisite to 202.

203 • Creative Writing (4)
Prerequisite: Consent of instructor.

205A • Old English (4)
Introduction to the language and prose.

205B • Old English (4)
Shorter poems and Introduction to *Beowulf*. 205A prerequisite to 205B.

205C • Old English (4)
Completion of *Beowulf*. 205A—B prerequisite to 205C.

206 • The History of the English Language (4)

207 • The Structure of the English Language (4)

208 • Applied Rhetoric, Poetics and Linguistics (4)
Prerequisite: Consent of instructor. The application of linguistic and rhetorical principles to the study of literature. Emphasis on practical criticism.
Content of "Studies" courses and Seminars listed below will vary from quarter to quarter; therefore these may be repeated for credit with the consent of the chairman of the Departmental Graduate Committee.

230 • Studies in Medieval Literature (4)

231 • Studies in Renaissance Literature (4)

232 • Studies in Restoration and Eighteenth Century Literature (4)

233 • Studies in Nineteenth-Century Literature (4)

234 • Studies in Twentieth-Century Literature (4)

235 • Studies in American Literature (4)

236 • Studies in Literary Criticism (4)

260 • Seminar In Medieval Literature (4)

261 • Seminar in Renaissance Literature (4)

262 • Seminar in Restoration and Eighteenth-Century Literature (4)

263 • Seminar in Nineteenth-Century Literature (4)

264 • Seminar in Twentieth-Century Literature (4)

265 • Seminar in American Literature (4)

270 • Seminar in Poetry (4)

271 • Seminar in Drama (4)

272 • Seminar in Fiction (4)

273 • Seminar in Literary Criticism (4)

297 • Graduate Studies (1-4)
Graduate credit given for an Upper Division course with additional work at the graduate level.

596AA—596ZZ • Directed Reading and Research (1-4)
Individual tutorial. A written proposal for each tutorial must be approved by the department chairman and filed with the Graduate Division.

597 • Individual Study for Master's Comprehensive and Ph.D. Examinations (1-12)
Maximum of 12 units per quarter. Satisfactory/Unsatisfactory grade. Instructor should be the student's major professor or the chairman of his doctoral committee. No unit credit allowed toward advanced degree(s). Enrollment limited to 24 units per examination.

599AA—599ZZ • Dissertation Research and Preparation (1-6)
Only for research underlying the dissertation; writing the dissertation.

Related courses in Education

Education/SE 390 • Curriculum and Instructional Procedures and Materials Used in Teaching English in the Secondary School (1)
Prerequisite: Admissions to Secondary Credential Program in English. Seminar for student teachers in classroom application of educational theory to the teaching of English. Three quarters required.

Education/SE 392 • Student Teaching: English (6)
Prerequisites: Education/SE 390 and admission to student teaching.

Education/SE 393 • Problems Seminar in Teaching of English (1)
Prerequisite: Education/SE 390.

Education/SE 394 • Current Trends in the Teaching of English (4)
Seminar, limited to experienced teachers of English, aiming to reassess the goals and methods for the teaching of English.

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*See L-2 for 198/199 independent studies unit limitations.

Environmental Studies

Professor

Roderick W. Nash, Ph.D., Wisconsin; History and Environmental Studies (Chairman).

Lecturers

J. Marc McGinnes, J. D., Berkeley Law School (Boalt Hall).
Orrin G. Sage, Jr., Ph.D., UCSB; Geological Sciences.
Arent H. Schuyler, Jr., M.A., UCSB; Biological Sciences (Executive Officer).

Advisory Committee*

Robert Deacon, Ph.D., Assistant Professor of Economics.
Dean E. Mann, Ph.D., Professor of Political Science.
Harvey Molotch, Ph.D., Associate Professor of Sociology.
William Murdoch, Ph.D., Associate Professor of Biological Sciences.
Arthur Sylvester, Ph.D., Associate Professor of Geological Sciences.
James Vanyo, Ph.D., Associate Professor of Mechanical Engineering.

Concerns of the department

Environmental Studies is a multidisciplinary, problem-oriented major offering direction to students interested in the total environment and its management. The major is designed to give the student a knowledge of the characteristics of the environment and the working approaches to the solution of environmental problems.

Bachelor of Arts

Preparation for the major

Required: Environmental Studies/1,2,3,4,5,6 and any introductory course in statistics. ENV S/1,2 and 3 will normally be taken in the first year; and ENV S/4,5 and 6 in the second.

Upper Division major

Required: Environmental Studies/197(6).

32 additional units chosen from the following list, with no more than one course taken from each group below except Environmental Studies. (Note that Botany/103A and B and Political Science/177A and B and Geography/101 and 101L are considered a single course).

Anthropology/104 or 110 or 160 or 178
Anthropology/Environmental Studies/129
Art/165A
Art/Environmental Studies/164G
Biology/124 or 133 or 145A or 145B
Biology/Environmental Studies/123,155
Botany/103A and B or 140
Chemistry/Environmental Studies/101
Economics/110 or 115 or 120 or 122 or 167
English-Environmental Studies/141
Environmental Studies/105, 125, 126, 145, 165A and B, 175, 180, 192 (4 units only), 194 (4 units only), 199 (4 units only)
Ergonomics/142
Geography/101 and 101L, or 105 or 106 or 111 or 112 or 114 or 162 or 180
Geography/Environmental Studies/135
Geology/145
Geology/Environmental Studies/106
History/105 or 173C or 174A or 174B or 176A or 176B or 177 or 178A or 178B
History/Environmental Studies/173T
Mechanical Engineering/110 or 157 or 180
Nuclear Engineering/110
Physics/Environmental Studies/102
Political Science/154 or 175 or 177A and B
Political Science/Environmental Studies/190C
Psychology/130
Religious Studies/168
Sociology/107 or 123 or 126 or 127 or 132
Sociology/Environmental Studies/121
Zoology/113A or 113B or 140

Note: Other courses may be approved as substitutes upon petition to the major committee.

Also required is a concentration of 20 Upper Division units in another department of the College of Letters and Science, 10 units of which should be completed by the end of the junior year. Early choice of concentration, in consultation with the appropriate departmental representative, is essential. Upper Division courses chosen for the major may also count toward the concentration. A second major is considered complete fulfillment of the concentration requirement.

Career opportunities

Environmental Studies prepares students for careers ranging from teaching and government to law and business. The program is also preparation for work in the expanding fields of urban and regional planning, environmental impact analysis, natural resource management and conservation administration. Normally a major in Environmental Studies is not alone sufficient for admission to graduate programs in the sciences. Students with plans for graduate study in science should consider the possibility of a double major in Environmental Studies and the appropriate science.

Teaching credentials

Students who complete the major in Environmental Studies may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence Information

Environmental Studies Program, Phelps Hall, Rm. 3206, University of California, Santa Barbara, California 93106 Phone: (805) 961-2968.

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*(See appropriate departmental entries for faculty information.)

Environmental Studies

Lower Division courses

1 • Introductory Physical Environment (5) Schuyler
Lecture, four hours, discussion, one hour. A study of natural and manmade changes in the physical environment. The atmospheric sciences will be emphasized and the methods of chemistry, physics, geography, meteorology and climatology will be used to study the problems of air pollution and weather and climate modification.

2 • Introductory Biological Environment (5) Howmiller
Lecture, four hours; laboratory, two hours. General principles of ecology and their implications for analysis of current environmental problems such as population growth, food production, biocides, and pollution.

3 • Introductory Social Environment (5) Deacon
Lecture, four hours, discussion, one hour. Instruction in the basic techniques of history, political science, economics, and their uses in understanding man's attitude toward and management of the environment.

4 • Intermediate Social Environment (5) Nash
Lecture, four hours, discussion, one hour. A case study approach to selected environmental problems such as the Santa Barbara oil spill of 1969 is used to reveal underlying historical, cultural, economic, and political principles.

5 • Intermediate Physical Environment (5) Schuyler
Lecture, four hours, discussion, one hour. A survey of man's present and future production and use of energy. The efficiencies of energy sources are studied using elementary thermodynamics. The environmental effects of energy production are examined and all possible alternatives are considered. Field trips are taken to power installations.

6 • Intermediate Biological Environment (5) Engel
Lecture, four hours, laboratory two hours. A survey of the biology and natural history of the Santa Barbara region with emphasis on interrelationships between plant and animal communities. The laboratory exercises and field trips introduce the student to field and sampling methods, needed for upper division work in environmental studies.

25FS • Freshman Seminar in Environmental Studies (4) Schuyler
Interdisciplinary investigation of an environmental problem and approaches to its solution. Open only to freshmen.

Upper Division courses

101 • Problems in Environmental Chemistry (3) Matson
Prerequisite: ENV S/1 and 5 or one of the following: Chemistry/1B, Chemistry/25, or Natural Science/1B. Lecture, three hours. The chemistry of air, water, and soil pollution: sources and methods of control; chemical dynamics in the environment; chemical and instrumental methods of analytical pollution monitoring; chemical quality standards and their maintenance. Open to Chemistry majors for credit but cannot be used to satisfy required Chemistry electives. **This course is the same as ENV S/101.** Applicable only to the B-2 area of General Education requirements.

102 • The Automobile and the Environment (4) Barrett
Prerequisites: ENV S/1 and 5 or Physics/10 or equivalent. Lecture, three hours. A study of the automobile as it affects the physical environment. Topics of basic science will be introduced as they relate to the internal combustion engine and other power sources. The gaining of skills in analyzing the technical aspects of an environmental problem will be emphasized. **This course is the same as Physics/102.**

105 • Advanced Solar Energy and the Environment (4) Honikman
Prerequisite: ENV S/5 or Nuc Engr/110 or equivalent or consent of instructor. Each major solar energy field is investigated in detail. Topics include heating and cooling, photovoltaics, chemical and bioconversion, and mechanical extraction. Effects of solar energy applications on the physical, social and economic environments are studied. Some guest lecturers, demonstrations and field trips are planned.

106 • Geological Problems of the Human Environment (4) Sylvester
Prerequisite: ENV S/1 and 5 or Geology/2 or 101 or the equivalent or consent of the instructor. Lecture, three hours; discussion, one hour. Problems concerning earthquakes, mineral and energy resources, construction projects (dams, highways, tunnels, etc.), floods, beach erosion, etc. Principles of sound planning for the human use of the solid earth. **This course is the same as Geology/106.**

121 • Environment and Society (4) Whitt
Lecture, three hours. Impact of social institutions on human-environment relations. Cultural conceptions of human-environment links. The present crisis and possible future. **This course is the same as Sociology/121.**

123 • Cybernetic Processes in Human Ecology (4) Hardin
Prerequisite: Biology/1A or 20 or Botany/20 or ENV S/2 or consent of instructor. Lecture, three hours; discussion, one hour. A study of controversial social problems and the relevance of biological facts and principles to their solution. Elements of cybernetics and systems analysis. Population growth and related pollution and conservation problems. **This course is the same as Biology 123.**

125 • Principles of Environmental Law (4) McGinnes
Lecture, three hours. An introduction to the history and methodology of law as it relates to man's use of the environment.

126 • Environmental Law: Advanced Study and Practice (4) McGinnes
Prerequisite: ENV S/125 or consent of instructor. Seminar, three hours. A detailed analysis and practical experience in selected areas of environmental law. The importance of the environmental scientist, as fact-finder and expert witness, is to be stressed and illustrated. Local specialists, attorneys and public officials will be invited to participate in discussions of specific environmental law issues, and the students will have the opportunity to work in teams, under expert supervision on current cases.

129 • Agriculture and Environment (4) Hudson
Lecture, three hours. Traces the origins of agriculture in prehistoric Europe, Middle East, North and South America. The social and environmental consequences of agriculture are examined as well as various hypotheses explaining its origin and subsequent role in the rise of great civilizations. **This course is the same as Anthropology/129.**

135 • Principles of Environmental Planning (4) Clayton
Lecture, three hours. An introduction to the history and theory of urban, regional, national, and international planning for responsible use of the environment. Field trips to local urban areas. **This course is the same as Geography/135.**

141 • Amerian Literature and the American Environment (4) Allaback
Lecture, three hours. A study of the literary response to the American landscape. Readings and discussions of various American novelists, poets, and men-of-letters who are particularly sensitive to their environment. Included in the course will be such writers as Thoreau, Cather, Snyder, Frost and Guthrie. **This course is the same as English/141.**

145 • Field Methods in Environment Impact Analysis (4) Sage
Prerequisite: Senior standing only. Lecture, one hour, field, four hours. ENV S/145 will provide a field methods approach to environmental impact statement preparation with an emphasis on understanding field data collected by technical experts that must in turn be synthesized into the final environmental impact statement.

155 • Conservation of Aquatic Resources (3) Williams
Prerequisites: Environmental Studies/1,2,5 and 6 or introductory courses in Chemistry and Biology. Lecture, two hours; discussion, one hour. Biological, chemical and physical characteristics of lakes, streams, and estuaries, succession and dynamics of population in aquatic environments. Emphasis will be placed on man's interaction with aquatic systems, pollution, entrophication, fisheries management. **This course is the same as Biology 155.**

164G • The Artist as Environmentalist (4) Smith
Lecture, three hours. An historical study of how the artist thinks about, plans for, and reacts to the environment as seen through paintings, city plans, urban and suburban systems, landscape and garden theories and design, and projects for the future. **This course is the same as Art/164G.**

165A—B • Environmental Impact Analysis (4,4) Sage
Prerequisite: Senior standing only. Lecture, three hours. ENV S/165A will analyze the environmental impact statement, now required by state and federal laws for both private and public projects that will have a significant effect on the environment. ENV S/165B will focus on the preparation of an environmental impact report for a local project.

173T • Wilderness and Man: History, Meaning and Management (4) Nash
The significance of wilderness in world history with an emphasis on man's relation to it both aesthetically and economically. The perspective will be international, although the American experience is the central concern. Special attention to the problems of preserving wilderness in modern civilization and to the future of wild country. Case studies and audio-visual techniques will be an important part of the course as will a wilderness field trip. **This course is the same as History/173T.**

175 • World Environmental Health (4) Baines
Prerequisite: ENV S/2 and 6 or Biology/20 or Zoology/40 or consent of instructor. Lecture, three hours. An introduction to the biology and physiology of the effects of world environmental factors. Discussion of health problems caused by biological, chemical, and physical factors and their effects on human well being.

180 • Studies of Regional Environmental Problems (4) Staff
Prerequisite: Junior or Senior standing. Seminar, three hours, field trip. Detailed study of the environmental characteristics and problems of a particular area such as Yosemite, Point Reyes, Mojave Desert, Grand Canyon, and the Los Angeles Basin. An intensive week-long field trip will follow the course.

190C • Laboratory Seminar in Environmental Policy Problems (3) Noel, POLIS Staff
An examination, through computer-based gaming and simulation of selected problems in environmental policy and politics. Offerings of 190C will alternate between an urban airpolution focus (the "METRO-APEX" simulation) and a water-pollution focus (the "River Basin Model"). Accordingly, 190C may be repeated for credit. (190C may be taken independently of other 190 labs.) **This course is the same as Political Science/190C.**

192 • Internship in Environmental Studies (1-12) Staff
Prerequisite: Upper Divison status, 3.00 overall GPA. Environmental Studies majors only, approval by department. Opportunities to learn about practical approaches to environmental problem-solving by working under faculty direction as interns with local, state, and federal agencies concerned with the environment or with private research and business organizations. Periodic and final reports will be part of the internship. Only four units may count toward the major.

194 • Group Study (1-5) Staff
Prerequisite: ENV S/1-3 and Upper Division status or consent of instructor. Directed group reading and study on specific subjects for Environmental Studies majors. Admission by special arrangement with the Environmental Studies Committee chairman. No more than four units may be counted toward the major.

197 • Senior Thesis (3-3) or (2-2-2) Schuyler
Prerequisite: ENV S/1-6 and 16 Upper Division units in the ENV S major or consent of instructor. The purpose of ENV S/197 is preparation of an extensive paper integrating knowledge acquired in the major. Required of all Environmental Studies majors, taken in the last two or three quarters of the senior year.

***199 • Independent Investigation in Environmental Studies** (1-5) Staff
Directed research in the characteristics and problems of the environment. Open only to students majoring in Environmental Studies who are approved by the Committee chairmen. Courses are limited to no more than five units in one quarter and twelve units total. Students must have completed 125 units. No more than four units may be counted toward the major.

Ergonomics and Physical Education

Professors

Marian H. Anderson, M.S., USC; (Emeritus).
Rowand R. J. Chaffee, Ph.D., Harvard; environmental physiology — metabolic control mechanisms.
Theodore Harder, Ed.D., Oregon (Emeritus).
Jean Hodgkins, Ed.D., Columbia (Emeritus).
Steven M. Horvath, Ph.D., Harvard; biomedical engineering — cardiovascular physiology.
Evelyn M. Jones, Ph.D., Wisconsin; nutrition and biochemistry.
Joseph E. Lantagne, Ed.D., Stanford (Emeritus).
Ernest D. Michael, Ph.D., Illinois; exercise physiology (Chairman).
Rene H. Rochelle, Ph.D., Illinois; work physiology — circulatory studies.
Elvera Skubic, Ph.D., USC; perceptual motor learning and performance.
Gladys R. Van Fossen, M.A., USC; (Emeritus).

Associate Professor

Marilyn Flint, Ph.D., Iowa State; physical therapy.

Assistant Professors

Samuel Jacobs, Ph.D., Hahnemann Medical College; neurophysiology.
Charles M. Overbey, Ph.D., Johns Hopkins; human factors — engineering psychology.
Robert N. Parrish, Ph.D., Johns Hopkins; human factors — interactive computers.

Lecturers

Edward R. Dreher, Ph.D., Utah; sport sociology.

Adjunct Professor

Robert R. Mackie, Ph.D., USC; human factors — experimental psychology.

Concerns of the department

Ergonomics is the study of human performance and adaptability. It concerns itself with the psychological, kinesiological, physiological, and sociological principles underlying the effective use of human energy. In order to permit flexibility in preparing students for various professional goals, three majors are offered: Health Studies, Human Factors and Physical Education.

Bachelor of Arts — Health Studies

This major is designed to provide undergraduate preparation leading to such careers as physical therapy, occupational therapy, public health, community health and health instruction. Two tracks are open to students interested in Health Studies:

Pre-Physical Therapy emphasis

Preparation for the major

Biology/1A—B; Zoology/25 and 40; Chemistry/1A—B; Physics/6A—B (all previous courses with labs); Psychology/1 or 101; ERG/30; Sociology/1 or 101 and 3 units of physical activities as prescribed by the department.

Upper Divison major

Biology/130A or 127 or Zoology/107 (with lab); ERG/101,103, 104, 105, 109, 110, 118, 197B; and Psychology/103. *Electives:* Six units selected from the following: ERG/102, 106, 111, 117A, 142, 156, 158, 194, 199.

General Health emphasis

Preparation for the major

Biology/1A—1AL; Zoology/25—25L, 40—40L; Chemistry/1A—1AL; 1B—1BL; Organic Chemistry/8A—8B; Mathematics/30A; Physics/6A—6AL; 6B—6BL; Psychology/1; ERG/30, 42; Anthropology/5.

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*See L-2 for 198/199 independent studies unit limits.

Upper Division major

Biology/130A; Psychology/113A; ERG/105, 108, 109, 110, 156. *Electives:* 12 units selected from the following: Zoology/109; Biology/100, 104A, 104L, 107L, 108A, 108B, 108L; Chemistry/101; Anthropology/101, 102, 102H, 120A; Sociology/101; Psychology/102, 108.

Bachelor of Arts — Human Factors

Human Factors is an interdisciplinary science which draws upon the traditional disciplines of psychology, physiology and engineering. The major is designed to give the student a knowledge of human characteristics and limitations in relation to the jobs, environments, and technology of modern society. The essence of Human Factors is a human-centered approach to research, application and problem-solving and the major prepares the student to use information about people in the design of human-machine systems, work methods and environments so that we can live and work safely, comfortably, and effectively. The program provides a basic preparation for careers in industry or government and a solid foundation for graduate work in Ergonomics or Human Factors.

Preparation for the major

Required: Biology/1A—1AL; Zoology/25—25L; 40—40L; Chemistry 1A—1AL; 1B—1BL; Electrical Engineering/5; Mathematics/3A—3B or 30A; Physics 6A—6AL; 6B—6BL; Physics/6C—6CL (or equivalent physics series); Psychology/1, 3; ERG/30.

Upper Division major

Required: ERG/101, 105, 110, 117A, 117B, 118, 122A—B. *Electives:* Four units selected from the following: ERG/102, 106, 112, 113, 156, 158, 160, 197A. Four units from any of the following areas: Biology, Psychology, Engineering, Mathematics, Chemistry and Physics.

Bachelor of Arts — Physical Education

The curriculum in Physical Education provides the fundamental body of knowledge of the science and art of human movement. This academic major serves as an appropriate discipline underlying work toward a teaching credential or advanced graduate degrees. The major is designed primarily for students who may wish to pursue careers in such fields as teaching on the elementary, secondary, or college levels, coaching, working in recreation organizations and teaching children with perceptual-motor problems.

Preparation for the major

Chemistry/1A—1AL; Physics/6A—6AL; or 10; Zoology/25, 40 (with labs); Psychology/1 or 101; Sociology/1; ERG/20, and 30; six units of physical activity courses to include the following: aquatics, gymnastics, tumbling, track and field, basketball, dance, weight training, volleyball, tennis, wrestling and soccer (men only), field sports and modern dance (women only).

Upper Division major

ERG/101, 105, 109, 110, 111, 118, 130. *Electives:* 12 units in Upper Division courses in ERG with no more than six units in the 190 series.

Master of Arts

Requirements for the M.A. — (See J for Graduate Division admission requirements.)

I: Thesis Plan — A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or Upper Division courses, and at least 16 will normally be in the 200 series in the major subject. Courses outside the major may be taken upon approval by the student's advisory committee. No unit credit is allowed for the thesis. No more than 12 units may be taken in the 500 series.

II: Comprehensive Examination Plan — A minimum of 36 units of Upper Division and graduate courses is required, of which at least 20 units will normally be in the 200 series in the major subject. Courses outside the major may be substituted upon approval by the student's advisory committee. Satisfactory performance in a comprehensive examination and four units of 596 course work are required.

Career opportunities

Career information is provided in the description of the various majors in this section. Additional information can be obtained from the department.

Teaching credential

Students who complete a major in Physical Education may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Consult with designated counselors in the Department of Ergonomics and Physical Education to become informed about these special requirements in the area of Physical Education.

Successful completion of the M.A. in Physical Education is required for issuance of the Community College Instructors Credential. Students interested in the related professional preparation program (which is optional) should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Department of Ergonomics and Physical Education, Phelps Hall 1315, University of California, Santa Barbara, California 93106. Phone: (805) 961-2777.

Ergonomics

Lower Division courses

7 • Introduction to Human Factors (4) Overbey
Lecture, four hours. A general introduction to the interdisciplinary field of human factors. Emphasis upon developing an understanding of the ways in which modern technology, jobs, and environments realistically meet, or fail to meet, the human needs, capabilities, and limitations of contemporary man.

10 • Science of Nutrition (4) Jones
Lecture, four hours. Science of human nutrition with emphasis on food supplies and food selection.

11 • Nutrition for Contemporary Living (4) Jones
Seminar Topics: Food and Life, Nutrition Labeling, "Miracle Foods", Nutrition in the Supermarket, Food and Illness, Food Hazards, Food for the Life Cycle, Food for the Future.

20 • Concepts of Physical Education (3) Staff
An interpretation of the field designed to give the prospective major student an understanding of its scope.

30 • Basic Statistics (3) Parrish
Lecture, three hours; laboratory, three hours. Measures of central tendency, dispersion, and correlation, Inferential statistics, hypotheses testing, the significance of differences. Introduction to nonparametrics. Interpretation of statistical methods in the physiological and psychological areas of performance.

30L • Measurement and Evaluation Laboratory (1) Parrish
Prerequisite: concurrent registration in ERG/30. Laboratory, three hours.

42 • Drug Action and Reaction (4) Jacobs
Lecture, four hours. A course designed to acquaint students with the field of pharmacology and basic mechanisms of drug action. Topics will include drug dosages, metabolism and distribution; drugs used in anesthesia, the major disease states, psychopharmacological agents, 'street' drugs and drug abuse.

Upper Division courses

100 • History and Science of Health and Disease (4) Staff
History of health and preventive medicine. Modern contributions to health from the sciences.

101 • Analysis of Movement (4) Staff
Prerequisites: Zoology/25 and Physics/1—6A or 10. Lecture, three hours; laboratory, three hours. Basic concepts of human movement, physical and biological principles involved, and their application to fundamental movement patterns and athletic skills.

102 • Advanced Analysis of Movement (4) Staff
Prerequisite: ERG/101. Lecture, 3 hours; laboratory, 3 hours. Analysis and evaluation of contemporary research in biomechanics, skill performance and related topics.

103 • Kinesiotherapy (4) Flint
Prerequisite: ERG/101. Lecture, three hours; laboratory, three hours. Pathology of handicapping conditions, variations of human structure and the role of exercise in the development and improvement of movement for the physically handicapped. Priniples required for posture control and basic movement patterns. An evaluation of selected exercises.

104 • Advanced Kinesiotherapy (4) Flint
Prerequisites: ERG/101 and ERG/103. Lecture, three hours; laboratory, three hours. Therapeutic exercise, rehabilitative techniques and developmental activities for the physically limited person. A thorough investigation of certain debilitating conditions including case histories. Visits to specialized clinics and rehabilitation centers.

105 • Physiology of Exercise (4) Michael
Prerequisite: Zoology/40. Lecture, three hours; laboratory, three hours. Response of organs and systems to exercise; the response of ventilation, heart rate, and peripheral blood flow to exercise, metabolism and exercise, oxygen uptake and oxygen debt parameters.

106 • Advanced Physiology of Exercise (4) Michael
Prerequisite: ERG/105 or consent of instructor. Lecture, three hours; laboratory, three hours. Sources of energy for exercise; diet and body composition; energy balance; respiratory and metabolic changes with exercise.

107 • Community Health Agencies (3) Jones
An analysis of community agencies supported by public and private funds which are concerned with the health and welfare of the population of the United States.

108 • Marriage and Parenthood (4) Staff
Tenets underlying successful marriage, emphasizing physiological and emotional factors.

109 • Health in the Twentieth Century (4) Staff
An in-depth study of communicable diseases and epidemiology, cardio-respiratory diseases, aging, the health and development of the adolescent, the pharmacology and toxicology of selected drugs, as well as health care and consumer protection.

110 • Neuromuscular Physiology (4) Chaffee
Prerequisites: Chemistry/1A; and Zoology/40. Lecture, three hours; Laboratory, three hours. Biochemical and cellular-physiological aspects of muscle and nerve cell function; and the function of the central and autonomic nervous system and other selected organ systems associated with motor performance.

111 • Growth and Motor Development (4) Rochelle
Lecture, four hours. Motor development from infancy to maturity, age changes, sex, and individual differences, maturation and motor learning in childhood adolescense, relation of motor performance to other aspects of behavior.

112 • Public Safety and Accident Prevention (3) Parrish
An analysis of causes of types of accidents and research supporting their prevention. Emphasis to be placed on the interaction among physiological, psychological, and sociological factors relating to accidents.

113 • Occupational and Industrial Health (3) Staff
A survey of recent research and analysis of the factors affecting the health, efficiency, and welfare of workers. Includes specific diseases and disabilities with their contributory conditions, the administration of industrial health programs, and legal aspects of employee health and safety.

114 • Preception and Information Processing (4) Overbey
Lecture, 4 hours. An analysis of the role of visual, auditory, and kinesthetic perceptual processes in human performance. Review of major theories of perception and information processing as they relate to psychomotor skills, attention, feedback,vigilance, decision-making, pattern recognition, and signal detection.

117A • Human Factors and Technology (4) Overbey
Prerequisite: Consent of instructor. Lecture, four hours. Experimental psychology applied to the study of sociotechnical problems in modern society. Consideration of psychological and physiological factors in the design, staffing, and utilization of contemporary environment and man-machine systems. Personnel selection, placement, training, and design of the work task.

117B • Advanced Human Factors (4) Overbey
Prerequisite: ERG/117A. Lecture, four hours. Special topics in: human performance evaluation criteria; man's information processing capabilities and limitations; man-machine dynamics; man-computer communication; cybernetic model of man's role as decision-maker within complex systems; and motivational factors in job performance.

118 • Perceptual Motor Learning (4) Skubic
Prerequisites: Psychology/1 or 101. Lecture, three hours; laboratory, three hours. Sensory, cognitive and motor processes involved in motor learning; perceptual motor dysfunction; environmental and instructional factors influencing the learning situation.

122A • Advanced Statistics, First Course (4) Parrish
Prerequisite: Mathematics/33 or consent of instructor. Lecture, four hours. Measurement scales, tabular and graphic methods, measures of central tendency, dispersion, and relationship prediction and estimation probability. Introduction to computer programming.

122B • Advanced Statistics, Second Course (4) Parrish
Prerequisites: 122A. Lecture, four hours. Theoretical distributions, estimation, hypothesis testing, inferential techniques, analysis of variance, multiple comparison methods, nonparametric statistics, introduction to experimental design, computer usage for statistical problems.

130 • The Cultural Bases of Physical Education (4) Staff
Prerequisite: ERG/20. Lecture, four hours. The philosophical and sociological foundations of Physical Education. An examination of principles of natural and behavioral science as determinants of current beliefs and practices. Social variables which affect and are affected by individuals and groups as they engage in movement.

142 • Leisure and Society (4) Staff
Prerequisite: Sociology/1 or 101. Lecture, three hours; discussion, one hour. A study of the role of leisure in society. Causal factors of the increase in leisure in the United States; implications of automation. Urgency of the need for widespread recognition of the potential problems involved.

152 • Introduction to Toxicoltgy (4) Jacobs
Prerequisites: ERG/42, Biology/1A, Chemistry/8A and 8B or consent of instructor. Lecture, four hours. A study of various toxicological agents and their effects on normal physiological functions. Topics to be discussed will include: principles of drug action, biological factors influencing toxicity, antidotal therapy, industrial and environmental hazards, medicinals, drugs of abuse, and household toxins.

156 • Cardiorespiratory Physiology of Performance (4) Rochelle
Prerequisites: ERG/105. Lecture, three hours; laboratory, three hours. Function and regulation of the circulation, heart, vascular bed, dynamics of the circulation, reflexes.

158 • Physiological Adjustment to Work and Environmental Stress (4) Chaffee
Prerequisites: Consent of instructor. Lecture, four hours. Interrelations of the reactions and adjustments made by the working man to the usual stressful states to include temperature and humidity alterations, altitude and underwater living and also to the newer environmnental stressors, such as air pollution, and urban living.

160 • Perceptual Motor Performance (4) Skubic
Prerequisite: ERG/118 or consent of instructor. Lecture, three hours; laboratory, three hours. Individual variables involved in highly skilled performance such as personality, physique, intelligence, emotion, pain tolerance and motivation; psycho-social influences in sport psychology.

165 • Perceptual Motor Re-education (4) Skubic
Prerequisite: ERG/118 or consent of instructor. Lecture, three hours; laboratory, three hours. A study of prominent theories underlying perceptual-motor types of dysfunctions. An analysis of problems and their remediation through motor activity. Laboratory: Work with elementary school children involving administration of tests, diagnosis of problems and the implementation of a perceptual-motor program.

180 • Seminar: Leisure and the Child (3) Skubic
Prerequisite: Consent of instructor. Lecture, two hours;

laboratory, four hours. Theories of play, motivation and creativity. Application of principles of human movement. Laboratoy experience in the elementary schools.

181 • Food Analysis (4) Jones
Prerequisite: Chemistry/1A—B—C, Biology/1A, ERG/10. Lecture, two hours; laboratory six hours. The analysis of foods. Detection of preservative and adulterants.

182 • Nutrition and Biologic Processes (4) Jones
Prerequisite: Chemistry/1A—B—C, Biology/1A, ERG/10, and Zoology/40. Lecture, four hours. The biological role of carbohydrates, fats, proteins, vitamins, minerals and water in relation to human nutrition.

183 • Metabolic Considerations in Human Performance (4) Jones
Prerequisite: ERG/182 (may be taken concurrently) or consent of instructor. Lecture, two hours; laboratory six hours. Observation of the influence of special diets upon various phases of metabolism. Analytical procedures for the various constituents of blood and urine and other physiologic measurements.

184 • Therapeutic Nutrition (4) Jones
Prerequisite: ERG/182. Lecture, three hours; laboratory four hours. Nutritional, physiological and biochemical basis for the therapeutic treatment of pathological conditions and metabolic diseases in man by dietary alterations.

185 • Ergonomic Nutritional Seminar (4) Jones
Prerequisite: ERG/182. Lecture-discussion, three hours. The relationship between nutrition and energy balance in humans for various work situations.

194 • Individual and Group Studies (1-4) Staff
Prerequisite: Consent of instructor. A critical review of research in selected areas. Enrollment normally limited to 12 or fewer students.

197A • Senior Seminar (3) Staff
Prerequisite: Qualified senior students and consent of instructor. A study of the current literature of the field.

197B • Senior Seminar—Prephysical Therapy (3) Flint
Prerequisites: ERG/103 and 104 (or concurrently). Lecture, three hours. Advanced readings and discussion dealing with various problems related to physical medicine, rehabilitation or corrective physical education.

199 • Independent Studies in Physical Education (1-5) Staff
Prerequisite: Only students in senior standing. Study of special problems in physical education or recreation. 199 Courses are limited to no more than five units in one quarter and no more than 12 units total.

Graduate courses

203 • Biomechanics (4) Flint
Prerequisites: ERG/101 and 102 or equivalent. Lecture, four hours. Kinematics and kinetics of human motion. Analysis of fundamental movement patterns. Factors affecting normal performance. Critical analysis of current research in biomechanics, biomedical engineering, ergonomics and the life sciences. Projects utilizing cinematography, electromyography, and biomechanical techniques.

204 • Mechanisms of Motor Response (4) Staff
Prerequisite: ERG/118 or consent of the instructor. A specialized seminar on response organization, storage and retrieval mechanisms, closed-loop theory and cybernetics as they relate to human performance.

206 • Seminar in Work Physiology (4) Michael
Prerequisite: ERG/105. Physical growth and development of skeletal and muscular systems. Effects of exercise on adaptation to stress. Metabolic costs of work and energy balance. Training and fatigue, evaluation of work capacity.

207 • Environmental Physiology (4) Horvath
Prerequisite: Consent of instructor. The physical, chemical, and biotic influences of the environment on man, and the adaptive changes in response to environment.

210 • Biomedical Aspects of Ergonomics (4) Chaffee
Prerequisite: ERG/105 and 110. Lecture, four hours. Many of the changes occurring in man's tissues and physiological chemistry during exercise and work performance can be detected in studies on changes in body fluids. These changes will be the major subject material of this course.

218 • Physiology of Aging (4) Horvath
Prerequisite: Consent of instructor. Physiological alterations occurring consequent to the aging processes. A study of the changes which occur in the human organism from the moment of birth, through the developmental years to maturity and to biological senescense, with sociological and psychological correlates.

231 • Organization, Administration and Curriculum of Physical Education (4) Staff
Prerequisite: ERG/130. Organization, administration and curriculum of Physical Education in the American schools. Analysis and observation of secondary programs.

235 • Design and Statistical Analysis (4) Overbey
Prerequisite: ERG/30 or consent of instructor. Lecture, three hours; laboratory, three hours. Application of statistical methods to research in the physiology and psychology of human performance. Includes analysis of variance, latin square design, regression and distribution free statistics.

240 • Advanced Topics in Pharmacology (4) Jacobs
Prerequisite: Consent of instructor. A review of receptor mechanisms in the autonomic and central nervous system; structure activity relationships and the mechanism of action of selected cholinergic and adrenergic drugs, as well as agents effecting the central nervous system.

250 • Philosophies of Ergonomics (4) Staff
Prerequisite: ERG/130. An examination of philosophical thinking in the field, the early historical thought that influenced current beliefs, and implications for the future. The formulation of a professional philosophy by the student.

252 • Critical Issues in Health, Physical Education and Recreation (4) Dreher
Current problems, trends, and research in health, physical education, and recreation; their scope and implications.

259 • Seminar in Human Factors Research (4) Overbey
Prerequisite: Consent of instructor. An examination of instrumentation, analysis and interpretation of current human factors research.

276 • Fundamentals of Research (4) Staff
Prerequisite: ERG/30. A review of the research literature in ergonomics; an analysis of research methods used.

280 • Motor Learning and Performance (4) Staff
Prerequisite: ERG/118, or consent of instructor. A critical examination of research in the area of motor learning. Environmental, physiological and psychological factors influencing the learning and performance of motor skills; perceptual-motor dysfunction.

594A—B—C—D • Special Topics (1-4) Staff

596A—B—C—D • Directed Reading and Research (1-6) Staff

Related courses in Education

Education/P 390 • Curriculum and Instructional Procedures and Materials Used in the Teaching of Physical Education (3) Staff
Prerequisite: Major or minor in physical education. Procedures, materials, methods and techniques of teaching physical education. Program planning and organization of physical education and athletic programs at the secondary level with observation in the elementary and secondary schools.

Education/P 392 • Student Teaching: Physical Education (1-6) Staff
Prerequisite: Major or minor in physical education: Education/P 390. Teaching practice and class management under the supervision of master teachers and University supervisors.

Education/P 393A—B • Seminar in Student Teaching: Physical Education (1-1) Staff
To be taken concurrently with Education/P 392.

Film Studies

Advisory Committee

Edward Loomis, Ph.D., Professor of English.*
Jorge de Sena, Ph.D., Professor of Portuguese.*
Alexander Sesonske, Ph.D., Professor of Philosophy.*
Gunther Gottschalk, Ph.D., Associate Professor of German.*
Patrizio Rossi, Ph.D., Associate Professor of Italian* (Chairman).
Naomi Greene, Ph.D., Assistant Professor of French.*
Torborg Lundell, Ph.D., Assistant Professor of Swedish.*
Nancy Reinhardt, Ph.D., Assistant Professor of Dramatic Art.*

Concerns of the major

The Film Studies major is an interdisciplinary major dedicated to the study of film as a humanistic discipline. Through courses in various fields of study, the Film Studies major aims at providing a solid basis for critical evaluation of this medium which is becoming more and more a part of our lives and of the relationships between film, social conditions, and between film and the more traditional academic disciplines. Thus, the emphasis of Film Studies at UCSB is *critical* rather than *technical*. The purpose of the Film Studies Program is to unite the various courses in film given at intervals in various departments and to permit the organization of the study of film on a central but flexible basis.

Bachelor of Arts

Requirements for the Film Studies major are flexible and can be structured to meet the student's interests. In consultation with a faculty advisor, the student may work out an individual program centered around special interest and goals. Students are advised to call on the Chairman or members of the Advisory Committee to discuss the program or courses.

Preparation for the major

Required courses

Dramatic Art/**46** • **Introduction to Motion Pictures.**
Dramatic Art/**60** • **Understanding of Drama** or, Dramatic Art/**163** • **World Drama and Theatre** or (by petition) any other course giving a general idea of structural drama.
History/4A—B—C or, History 17A—B and one quarter from History 4A—B—C, 87, or 89.

One of the following:

Music/**15** • **Music History and Appreciation.**
Art/**1** • **Introduction to Art.**
Art/**160B** • **Art in 20th Century Culture I.**
Art/**160C** • **Art in 20th Century Culture II.**
Dramatic Art/**160E** • **Development of Dramatic Art.**

Strongly Recommended:

English/**120** • **Modern Drama.**
Philosophy/**136** • **Aesthetics.**
History/**173—S** • **American Popular Cultural History.**

Upper Division major

(40) Upper Division units, as follows:

Dramatic Art/**146** • **Aesthetics of Film** (4).
(12) units of (consult the list of approved courses posted in the Film Studies office.)
(24) units from the following as they are offered:

Colloquium/**126** • **Methods of Criticism, 130** • **Ontology of Film, 132** • **Seminar on British Cinema, 133** • **Aesthetics of Violence in Film.**

Film Studies/105, 115, 128, 133, 151A—B, 152, 155, 156, 158, 159, 170, 186, 190, 191, 194, 198*, 199*.

French/**178X—Y** • **French Film: Theory and Practice, 184X** • **French Novel into Film, 184Y** • **French Film Directors, 184Z** • **Key Works of the French Cinema, 187** • **Surrealist Film, 187X** • **French Cinema of the 1930's, 187Y** • **French Cinema since World War II, 188X** • **Contemporary French Drama and Film, 189X** • **Political Attitudes in 20th Century French-Italian Novel and Film, 189Y—Z** • **Personal Documentary: From Vertov to Cinema Verite, *199** • **Independent Study.**

English/**194** • **Aesthetics of Violence in the Cinema.**

German/**138** • **German Literature in Motion Pictures.**

Italian/**142X** • **Moravia, Pirandello, Fellini: Contemporary Italian Fiction, Drama, and Film, 180X—Y—Z** • **World Cinema, 181X** • **Post-War Italian Cinema, 188X—Y** • **Introduction to Italian Cinema, 189X** • **Political Attitudes in 20th Century French-Italian Novel and Film.**

Scandinavia/**139B** • **Scandinavian Drama, 140** • **Swedish Film.**

Career opportunities

The Film Studies major is designed to provide undergraduate preparation for graduate studies in film and would also serve as preparation for careers in teaching (for which a double major such as Film Studies/English or Film Studies/Social Sciences would be helpful), Library Science, and certain government positions, as well as job opportunities in such related businesses as publishing, film, and television.

Correspondence information

Film Studies Program, South Hall, Rm. 4505
University of California, Santa Barbara, California 93106.
Phone: (805) 961-2347.

Film Studies

Upper Division courses

The Film Studies Program does not offer a fixed curriculum. Courses in film are offered at the discretion of the various departments and, because of the new and experimental nature of the field, are often subject to change and innovation; the curriculum is often supplemented by the addition of new courses. For this reason, a list of film courses with descriptions of the classes and a schedule of films to be shown will be posted outside the Film Studies office before the beginning of each new quarter, as close to the opening of pre-enrollment as possible. Students are urged to consult this list before pre-enrolling.

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*See appropriate departmental entries for faculty information.

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105 • Film Production (4) Staff
Prerequisite: Film Studies major or permission of instructor. Instruction in techniques of filmmaking (super-8 or regular-8 format), along with sound production and synchronization. Students will make short films to be viewed by the class. (Repeatable for credit up to 12 units.)

115 • Background to Contemporary Film Theory and Style (4) Staff
Will explore the shaping of new film styles during the 1950's and concurrently the shaping of new critical approaches to film.

128 • Charlie Chaplin, Buster Keaton, and the Silent Comedy Tradition (4) Staff
A comparison of the art of the two great comedians and film directors through an examination of some of their best films. The tradition of silent film comedy and the work of some of their contemporaries will also be discussed.

133 • The Aesthetics of Violence in Film (4) Staff
An investigation of the dramatic contexts of violence in the cinema, its origins and its aesthetic, moral and sociological implications. This course is the same as Tutorial Colloquium 133.

151A • American Film: The Arrival of Sound, the Early 1930's (4) Staff
A survey of the first few years of the sound film. Major genres and major directors.

151B • American Film: The Later 30's and Early 40's (4) Staff
A continuation of 151A. Survey of American film from late 1930's into early 1940's. Major genres and directors.

152 • The American Left in Hollywood (4) Staff
Exploration of the American left and its role in filmmaking from the 1930's through the early 1950's.

155 • Directors: Style and Substance in Cinema (4) Staff
Prerequisite: Dramatic Art/146 recommended. An intensive study of a body of work by a single director, with emphasis on an attempt to identify elements of style and characteristic themes, problems, or types of character.

156 • Hitchcock — Hawks: Rethinking the Auteurs (4) Staff
A look at representative and often rare Hitchcock and Hawks films. Readings of the major auteurist criticism of them, and an attempt to widen the scope of critical inquiry by various perspectives that have been ignored or undeveloped.

158 • Theatre and Film (4) Staff
Not a study of plays into films, but an exploration into the intertwined life of theatre and film: similarities and differences, the notion of stardom in each, Victorian melodrama, Meyerhold, Reinhardt, German Expressionism, high comedy, Brecht, and Artaud.

159 • Heroes, Heroines and Sex Roles in the Hollywood Film (4) Staff
An examination of changing views of the American man and woman, and the relations between them, as seen in a number of significant Hollywood films of different genres and from different eras.

170 • The Musical Film (4) Staff
The advent of the musical film, from silent film musicals to the present, and including analysis of dance styles and film choreography.

186 • Renoir and Lang (4) Staff
A study of major works, both European and American, of two directors whose different approaches to the art of film have proved seminal in shaping the development of the medium.

190 • Seminar in Semiology (4) Staff
Prerequisite: Instructor's permission. Investigates the semiological approach of analysis. Main readings will be from the works of Umberto Eco, Roland Barthes, Levi-Strauss.

191 • Seminar in Film Criticism (4) Staff
Prerequisite: Instructor's permission. Intensive practice in film criticism through a close examination of selected Hollywood films from different periods.

194 • Group Studies for Advanced Students. (2-4) Staff
Prerequisite: Upper Division standing, consent of Instructor and department chairman. Group studies designed to meet special curricular problems.

* **198 • Readings in Film Studies** (1-5) Staff
Prerequisite: Departmental approval, instructor's approval, Film Studies major and junior status. To allow the student to do directed research in a subject of his choice which may be so specialized as to require special instruction on a tutorial-type basis.

* **199 • Independent Studies** (1-5) Staff
Prerequisite: Departmental approval, instructor's approval, Film Studies major and junior status. Independent studies in a major theme or director in the history of film.

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*See L-2 for 198/199 independent studies unit limitations.

French and Italian

French

Professors

[1]*Anne G. Cushing,* Ph.D., Colorado; 19th and 20th century French poetry, Apollinaire.

Genevieve Delattre, Ph.D., Columbia; 19th century French literature, Balzac.

Andre Malecot, Ph.D., Pennsylvania; phonetics.

Edmond E. Masson, Ph.D., Berkeley *(Emeritus).*

Mark J. Temmer, Ph.D., Yale; 18th century French literature, Rousseau.

Ronald W. Tobin, Ph.D., Princeton; 17th century French theater, Racine.

[1],[2]*Philip D. Walker,* Ph.D., Yale; 19th century French literature, Zola (Chairman).

Associate Professors

Robert Beachboard, Docteur de l'Universite de Paris; La Belle Epoque, French civilization.

[2],[3]*Jack Murray,* Ph.D., Yale; 20th century literature, Proust.

Ernest Sturm, Ph.D., Columbia; 18th century novel.

Assistant Professors

William J. Ashby, Ph.D., Michigan; Romance, philology, linguistics.

[1]*Naomi Greene,* Ph.D., NYU; 20th century literature, film, Artaud.

Donald L. Maddox, Ph.D., Duke; Medieval French literature, structuralism.

Lecturers

Robert Rorke, M.A., Berkeley; Supervisor of Teaching Assistants.

[3]*Jacqueline Simons,* Diplome d'Etudes Superieures; Supervisor of Teaching Assistants.

Donald R. Westman, M.A., Columbia; Director of the Translator-Interpreter Program.

Italian

Associate Professors

Alfredo A. Bonadeo, Ph.D., Berkeley; Renaissance literature, Machiavelli.

Patrizio Rossi, Ph.D., Berkeley; Modern Italian literature, film.

Lecturers

Harry Lawton, M.A., B. Litt. (Oxon); Modern Italian poetry, Italian cinema.

William A. Zanghi, Ph.D., Illinois; Renaissance literature and Director of Italian 14.

Concerns of the department

The major in French or Italian is primarily a liberal arts major. It is not restricted to prospective teachers or to those preparing themselves for careers in government or business. It is designed above all for those who wish to receive a solid training in a humanistic discipline, enriching themselves through the study of a great foreign culture and contributing in the process to American civilization and the growth of international understanding.

The Department of French and Italian makes available to all students courses in French and Italian literature, including courses in English translation. These may be taken as electives or in satisfaction of the General Humanities requirement. Authors and movements whose contribution to world culture has been most considerable are stressed — e.g., Dante, Baudelaire, Surrealism, or Existentialism. The Department also provides courses on the French and Italian film and other French and Italian cultural institutions; provides instruction in the French and Italian languages and French linguistics; offers a major leading to the Bachelor of Arts degree in French or Italian; offers graduate programs leading to the M.A. and Ph.D. degrees in French literature or a combination of French literature and linguistics; offers a one-year post baccalaureate Translator-Interpreter Program that prepares the student for a qualification as a certified translator-interpreter of French; and collaborates with other departments in the Comparative Literature undergraduate major program, the Film Studies program, and the Medieval Studies program.

Language program

The study of foreign languages has traditionally been considered an essential part of a truly superior education. To assist students in their attempt to achieve their linguistic objectives, the Department offers a variety of courses: individualized instruction, a "four-skill" track, conversation, etc.

Students enrolled in individualized instruction (French/14 or Italian/14) proceed at their own pace. Whenever they have demonstrated a satisfactory performance in any one segment, they may go on to the next higher segment.

Students enrolled in language courses 1 through 6 who have received a D in one of these courses are strongly advised not to continue to the next higher course. Students who have received an F or a NP in one of these courses may not continue to the next higher course until they have repeated and passed the course failed or otherwise demonstrated the proficiency required for admission to the next higher level.

The Department reserves the right to place students in courses from which they can best profit. Students who have completed a more advanced course in a sequential series (e.g. French or Italian/1, 2, 3, 4, 5, 6) will not be permitted to take a course that is lower in the series. Students will not be permitted to take two courses of a sequential series concurrently. Students must complete French/26 and French/30 *prior* to taking Upper Division courses. Students who have completed an Upper Division course will not be permitted to take a Lower Division course in the department, with the exception of French/18A—B, 19A—B—C, and 28. Students who possess a native command of a foreign language will not be permitted to enroll in Lower Division courses pertaining to that language.

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[1] Absent on Leave Fall 1975
[2] Absent on Leave Winter 1976
[3] Absent on Leave Spring 1976

Bachelor of Arts — French

Preparation for the major

Course 14, or 1, 2, 3, 4, 5, 6 and French/26, 30.

History/4A—B—C and Philosophy/20A—B—C are strongly recommended.

Students who wish to make French their major subject must have maintained at least an average grade of C in the college courses in French taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Upper Division major

Forty Upper Division units in French are required. Of these, twelve units must come from French/**109A—B—C•Introduction to French Literature,** or its equivalent (an "equivalent" course is any literature course that covers approximately the same material as any one quarter of French/109 and is not in translation); twelve units must come from literature courses taught in French; and sixteen units must come from other Upper Division courses (e.g., French literature, film, language, culture). Of these sixteen units, a maximum of eight units may be from French courses taught in English (e.g., French/**164X • Rousseau and the Confessional Urge,** or French/**178X • French Film: Theory and Practice**).

Majors who go to France under the Education Abroad Program must complete at least eighteen units of Upper Division courses in the department on the Santa Barbara campus. The Department will grant only up to four units for each of the three segments of French BC/109A—B—C toward the fulfillment of major requirements. (For other regulations regarding EAP courses, please consult with the EAP or with the epartment Chairman.)

Bachelor of Arts—Italian

Preparation for the major

Course 14 or 1, 2, 3, 4, 5, 6. History/4A—B—C and Philosophy/20A—B—C are strongly recommended.

Upper Division Major

Forty Upper Division units in Italian are required. Of these, 21 units must come from Italian/101A—B—C and 110A—B—C; and 19 units from all other Upper Division courses.

Translator-Interpreter Certificate in French

In addition to fulfilling the general requirements for admission to graduate status, students must normally meet the following departmental requirements:

1. **Degree Requirement:** a Bachelor's degree from a recognized college or university.
2. **Academic Requirement:** an undergraduate major in French or a minimum of 24 upper division units in French.
3. **Practical Requirements:** one year of study at a recognized university in a French-speaking country; **or** extensive work experience requiring the use of French; **or** bilingualism (oral and written); **or** a graduate degree in French.

(Note: Requirements 2 and 3 may be waived in special cases.)

This program is a one-year, post-graduate program consisting of a sequence of five specialized courses (22 units) and three or four elective Upper Division courses (12-16 units). The specialized courses (French/400—421) are devoted to the techniques and practices of translation and interpretation from French to English and from English to French and, as such, are not suitable for remedial language study. They may not normally be applied towards graduate degrees in French literature, linguistics, or philology.

Upper Division elective course (12-16 units) allow students to plan individualized programs tailored to their own particular needs and interests. These electives must be approved by both the director of the Translator-Interpreter Program and the course instructors.

There are no final qualifying examination. However, examinations are given in all specialized courses, and each student must successfully complete *either* French/**420 • Advanced Translation** or French/**421 • Conference Interpreting** in order to receive the Certificate. This Certificate, granted by the University of California, attests to the graduate's competence as a translator-interpreter of French.

Master of Arts—French

Requirements

In addition to fulfilling the general requirements for admission to graduate status, the students must have an undergraduate major in French or its equivalent. Candidates who are deficient in this respect will take the necessary undergraduate courses to make up the deficiency before beginning work in the master's program.

The French Department offers the M.A. degree under Plan I (thesis) and Plan II (without thesis).

Plan I — the student is expected to take 36 units of work; 30 units must be course work and six units must be thesis work. Of the 30 units of course work, 18 units must be in graduate courses (i.e., "200" and "500" courses).

Plan II — the student is expected to take 36 units of course work, 24 of which must be in graduate courses (i.e. "200" and "500" courses).

The student must satisfy the following requirements: demonstrate a knowledge of French phonetics equivalent to French/103A—B (by evidence of transcript, by taking course 103, or by special departmental; examination); a knowledge of Old French Philology equivalent to French 204/A or B (by evidence of transcript, by taking course 204 A or B or by special departmental examination); and a reading knowledge of one additional relevant foreign language. It is recommended that students have a background in Latin equivalent to a year course in college prior to taking French/204 A or B.

Courses in other departments (English, foreign language, history, philosophy, art history, music, etc.) may, with the approval of the Graduate Adviser, be counted toward the degree if they have relevance to the student's special program.

All students must pass a written comprehensive examination. In preparing for the comprehensive examination, a candidate may follow one of two plans:

Plan A — designed for those who are primarily interested in literature. The comprehensive will consist of : a) a series of short question exams on the six main periods of French literature, to be answered in French; b) two formal essays on periods chosen by the student, at least one essay to be written in French.

Plan B — designed for those who are primarily interested in linguistics. The comprehensive exam will consist of: a) a series of short question exams on at least three periods of French literature and on up to three areas of linguistics (descriptive phonetics, general linguistics, applied linguistics, philology, etc.), to be answered in French; b) two formal essays, at least one essay to be written in French.

In addition *Plan I* students must pass an oral exam consisting of a defense of the master's thesis, *Plan II* students must pass an oral exam consisting of an *explication de texte* in French.

All students must demonstrate a proficiency in speaking and writing French.

Doctor of Philosophy—French

Requirements

See preceding section on admission to graduate status and on general requirements concerning residence, course load requirements, foreign languages, the oral qualifying examination, and the dissertation and its defense.

Departmental requirements:

Completion of an M.A. degree in French from UCSB or a degree based on equivalent training. (See preceding section on requirements for the M.A. degree.) Students having a degree from another institution must take a placement examination during the first quarter of residence. After the completion of the M.A., the student will take those courses recommended by advisers as useful in preparing for the comprehensive examination. (Note, however, that students holding teaching assistantships will be expected to enroll in a minimum of two graduate courses each quarter.)

A student must also satisfy the requirement of a reading knowledge of two relevant foreign languages.

All students must pass a series of written comprehensive examinations. In preparing for these examinations, a candidate may follow one of two plans:

Plan A — designed for those who are primarily interested in literature. The student takes six examinations on the main periods of French literature. Formal essays, upon recommendation of the student's guidance committee, may be substituted for up to three of the examinations. If wishing to concentrate on one period more than the others, the student may, with the approval of the guidance committee, omit an examination in one of the six periods and, in addition to taking the regular examination, write a formal essay in his area of concentration.

Plan B — designed for those who are interested in linguistics, philology, or phonetics. A specialist in linguistics takes examinations in at least three areas of linguistics and in up to three centuries of French literature. A specialist in philology is examined in Old French Philology, the history of at least one language other than French, linguistics, and up to three centuries of French literature. A specialist in phonetics takes examinations in general linguistics, French phonology, phonetics (physiological and acoustics), and at least two centuries of French literature. With special approval of the student's guidance committee, a student in *Plan B* may make certain specified substitutions of essays or research papers for examinations. If, moreover, the student wishes to concentrate more on one area than on others within the specialization, the student may, with the approval of the guidance committee, omit an examination in one of the other areas and, in addtion to taking the regular examination write a research paper in his area of concentration.

After the student has successfully passed all of the written comprehensives, a qualifying oral examination must be passed in order to be advanced to candidacy.

Following formal advancement to candidacy, the student must present a dissertation which gives evidence of ability to conduct independent research of high quality. Upon its acceptance, the candidate will defend it in a oral examination.

Ordinarily, a candidate is required to serve as a Teaching Assistant for a minimum of three quarters.

Check with the department for the latest schedule information and course prerequisites before registration.

Teaching credentials

Students who complete a major in French or in Italian may be eligible to pursue a California teaching credential. Specific details of the State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. The teaching major in French should take as many courses as possible from the series 103, 105, and 106 among the forty upper division units required for the major as specified above. French conversation courses are highly recommended for teaching majors. The teaching major in Italian does not differ from the regular major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. For further information concerning teaching majors the student must confer with designated counselors in French or in Italian.

Successful completion of the M.A. or Ph.D. in French is required for issuance of the Community College Instructors Credential. Students interested in the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter in the year in which the advanced degree will be completed.

Career opportunities

A knowledge of French or Italian, or both, is useful or necessary in a large number of organizations in business, industry, commerce, the civil service, education, library science, the media, religion, science, the social sciences, social service, and travel and tourism. Specific careers that might be mentioned in this connection include, among others, diplomats, translators, interpreters, foreign correspondents, specialists for international law, travel agents, language teachers, English, French, and Italian literature specialists, linguisticians, art historians, singers, and businessmen engaged in overseas enterprises. Many students in the Humanities need to master at least one foreign language.

The American Association of Theological Schools recommends that people planning to become Protestant ministers focus their college studies on the liberal arts, *including* foreign languages. For the Catholic priesthood, two years of Latin are required and the study of a modern language is encouraged. Jewish seminaries require Hebrew, and in many cases students make use of scholarly works written in French.

For additional information, consult the *Foreign Languages and*

Careers, written by Lucille J. Honig and Richard I. Brod, and published by the Modern Language Association, 62 Fifth Avenue, New York, N.Y. 10011, copies of which are available in the French and Italian Department office.

Correspondence Information

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French

Lower Division Courses

Please note: It is highly recommended that students take the French Placement Examination administered by the Department to determine the level of French they should take in the Department's language program.

Students wishing to begin the study of French may now choose between French/1-6 and French/14 • **Individualized Instruction 1-6.** To help them decide which they may prefer, the main characteristics of each course are listed below.

Comparison of French/1-6 and 14

French/1-6	**French/14**
All students progress at the same rate of speed and cover the same amount of material.	Each student progresses at his own rate of speed and covers differing amounts of material.
At the end of the quarter all students who pass receive four units of credit.	At the end of the quarter each student receives the units of credit he has earned (from an expected minimum of one to a theoretical maximum of 24).
Mastery of each instructional unit is encouraged but not required before the student proceeds to the next. As a result: the final grades for the quarter will be in the traditional range of A through F.	Mastery of each instructional unit is required before the student proceeds to the next. As a result: the final grade for the quarter will normally be A or B for all students.
Class and laboratory attendance are required.	Class (five meetings per week) and laboratory attendance are not controlled but highly recommended.
The instructor is primarily responsible for directing student learning.	Students are primarily responsible for directing their own learning (receiving suggested study procedures and individual guidance when needed). Also new vocabulary patterns are presented before the individual tackles them.
Tests are given to all students during regular classes at fixed times.	Tests are given outside regular class hours to each student when he is ready.

To sum up, French/1-6 is best for those students who prefer to stay with a group, with maximum guidance from an instructor, while French/14 is for those who wish to assume more responsibility for their own learning. French/14 is also for those who prefer to advance at a pace other than that imposed in French/1-6 or — to put it another way — who wish to earn either fewer or more than four units of credit per quarter (each student will wish to adjust the remaining course load according to the approximate number of units planned in French/14. Entrance into the French/14 Program is by sign-up in the Department office *only.* (Sign-up begins three weeks before the quarter.)

1 • Elementary French (4) Staff
The beginning course in French. Course taught in French. Oral skills stressed. Grammar reinforced by dialogue memorization and pattern drills. Correct pronunciation and the ability to distinguish sounds emphasized. Question-answer technique helps students transfer patterns to free conversation. Lab assignment given daily. Not taught in spring quarter.

2 • Elementary French (4) Staff
Prerequisite: French/1 or equivalent. A continuation of French/1. Course taught in French. Readings, essays, French geography included, the latter by means of slides. Lab assignment given daily.

3 • Elementary French (4) Staff
Prerequisite: French/2 or equivalent. A continuation of French/2. Course taught in French. Emphasis on readings and short essays rather than on dialogues. Slide programs given to encourage class discussion. Lab assignment given daily.

4 • Intermediate French (4) Staff
Prerequisite: French/3 or equivalent. Taught in French, the course reviews basic structures with new elements added. Vocabulary development stressed by means of original sentences and weekly essays. Reading selections to help develop oral-written correspondences included in the course.

Lab assignment given daily.

5 • Intermediate French (4) Staff
Prerequisite: French/4 or equivalent. A continuation of French/4. Course taught in French. Basic structures reviewed. Supplementary readings, such as *L'Etranger, Huis Clos*, etc., are emphasized. Lab assignment given daily.

6 • Intermediate French (4) Staff
Prerequisite: French/5 or equivalent. A basic text, used for the acquisition of vocabulary and the practice of essay writing, also stresses aspects of civilization and is complemented by readings of poems, plays, or novels.

8A • French Conversation (2) Staff
Prerequisite: French/3 or equivalent.

8B • French Conversation (2) Staff
Prerequisite: French/4 or equivalent.

8C • French Conversation (2) Staff
Prerequisite: French/5 or equivalent.

14 • Individualized Instruction 1-6 (1-24) Staff
Student proceeds at own pace in completing achievement levels centered around units of learning with self-correcting oral and written tests. Each achievement level, equivalent to one quarter, must be completed before proceeding to next level. Two group meetings, three consultations per week.

18A—B • Advanced French Conversation (2,2) Staff
Prerequisite: French/6 or 8C or equivalent. **A:** Political, philosophical, and sociological themes. **B:** French literature and literary criticism.

19A—B—C • Intensive Practice in Spoken French (4,4,4) Staff
Prerequisite: French/6 or 8C or equivalent. An intensive encounter with spoken French designed to develop communication skills. Systematic assimilation of oral structures through the study of film, sound tracks, and tapes. Exercises in oral expression. Active expansion of vocabulary and means of expression.

25X • Seminar on French Literature in Translation (4) Staff
Discussion of subjects of major interest pertaining to French literature and French culture in general—for example, Surrealism, Existentialism, the Avant-garde, the French Film, Modern French Drama, French Sources of American Culture. Subject will vary with intructor. *This course is open only to freshmen and sophomores.* Discussion and readings in English.

26 • French Composition (3) Staff
Prerequisite: French/6 or equivalent. Primarily designed to help students develop a writing skill in the French language. French grammar is reviewed but the coverage of this subject is limited to concrete situations arising from student's own compositions. Especially difficult grammatical topics are discussed upon students' request.

27 • Development of Advanced Reading Skill in French (3) Staff
Prerequisite: French/6 or equivalent. Designed to guide intermediate students of French through the difficulties involved in reading, within a reasonable amount of time, unabridged and unaltered French texts of considerable length, such as are assigned in courses of French literature. It is highly recommended that French/26 be taken concurrently.

28 • Introduction to French Linguistics (3) Malecot, Ashby
Prerequisite: French/26. A survey of the concepts and methods of linguistics, as they apply to the French language.

30 • Advanced Reading and Composition (3) Staff
Prerequisite: French/26. Training in analysis of literary texts by French critical techniques and in writing compositions.

Upper Division courses

Please note: French/26 and 30 (or the consent of the department) are prerequisite for all upper division courses taught in French. French majors should note that no more than eight units of French courses taught in English may be counted toward the major.

102 • Background of Modern French (4) Ashby
The origins of the French language and an overview of its linguistic development with emphasis on the historical and cultural background. Lectures and readings in French.

102X • Social Attitudes and Language (4) Ashby
A new approach to language, stressing the development of major modern Western languages, as affected by social and cultural factors. Lectures and readings in English.

103A—B • Phonetics (3,3) Malecot
Prerequisites: French/26, 28, and 30. 103A is prerequisite to 103B. Basic concepts of articulatory phonetics, phonetic transcription, and a detailed analysis of the conversational style of the Parisian professional class. Practice with recorded models in the Language laboratory. Lectures and readings in French.

103C • Poetic Diction (3) Malecot
Prerequisites: 103A—B. A detailed analysis of the phonetic differences between conversational style and phonetic diction. Practice in the application of these principals to the recitation of representative French poems from the Middle Ages to the present.

104A—B • Introduction to Stylistics (4,4) Staff
Comparative stylistics, French and English. Theory and practice. Lectures and readings in French. Formerly 128A—B.

105B • French Linguistics I (4) Malecot
An analysis of the morphology of Modern French.

105C • French Linguistics II (4) Ashby
An analysis of the syntax of Modern French.

105D • Problems in French Linguistics (4) Ashby
A few selected problems in the linguistic analysis of French will be studied in depth. The specialized focus will change from year to year. May be repeated with different topics for a maximum of 12 units. Lectures and readings in French.

106A—B—C • History of French Culture (4,4,4) Delattre, Beachboard
A study of the historical development and principal achievements of French culture from its origins to the 20th century. Lectures and readings in French.

108A—B—C • Introduction to Translation and Interpretation (4-4-4) Westman
An introduction to the uses and techniques of written translation and oral interpretation to and from French. Lectures, readings, and exercises in English and French.

109A—B—C • Introduction to French Literature (4,4,4) Staff
An introduction to French literature, spanning French literature from its medieval origins to the contemporary period. Authors and movements whose contribution to world culture has been most considerable will be stressed. Lectures and readings in French.

109X—Y—Z • Survey of French Literature in Translation (4,4,4) Staff
Authors, genres, themes, and movements which have had the greatest impact upon world literature will be stressed: e.g., the French epic, the Tristan legend, the Arthurian romances, the *Romance of the Rose*, Montaigne, French Classicism, *Candide*, Baudelaire, Proust, Sartre and others. Lectures and readings in English.

115 • Explication de Textes (4) Delattre
A detailed study of literary structure based on analysis of short excerpts from various periods and genres. Lectures and readings in French.

136A • Medieval Epic and Romance (4) Maddox
The rise of medieval narrative literature at the courts of Northern France, 1100-1280, with emphasis on the *chanson de geste* and Arthurian romance. Lectures and readings in French.

136B • Lyric Poetry of the Middle Ages (4) Maddox
Four centuries of French poetry (1100-1463), from the earliest songs of the *troubadours* and *trouveres* to the age of Villon. The importance of music, dance, oral recitation and dramatic representation in medieval lyric poetry. Thematic and stylistic analyses of selected tests from courtly and popular traditions. Lectures and readings in French.

136C • Literary Aspects of Medieval Culture (4) Maddox
A topical study of several aspects of medieval culture as reflected in saints' lives, dramatic works, prose chronicles, lapidaries, bestiaries and didactic treatises. Lectures and readings in French.

137X • Love in the Medieval French Narrative (4) Maddox
A study of seven medieval French guides to the art of love and of the thematic treatment of love in a variety of texts including *Tristan et Iseut*, the lays of Marie de France, the romance of Chretien de Troyes, *The Romance of the Rose, Aucassin and Nicolette*, and the *fabliaux*. Lectures and readings in English.

138X • The Medieval French Drama (4) Maddox
A study of the origins of Medieval European drama and of the development, staging, and critical theory of French drama with readings of major dramatic works to 1500. Lectures and readings in English.

140A • The Generation of Rabelais (4) Staff
A course on French literature of the beginning of the 16th century. The main emphasis will be on Rabelais, but other authors and their works will also be considered, including poets and story tellers such as Marot, Bonaventure des Periers, Marguerite de Navarre. Lectures and readings in French.

140B • French Renaissance Poetry (4) Staff
A course on French poetry of the mid-16th century. After studying a group of poets from Lyon (Sceve, Pernette du Guillet, Labe), whose works were particularly influenced by the Italian Renaissance, students will consider the works of the Pleiade, whose members (Du Bellay, Ronsard, etc.) intended to revolutionize poetry. Lectures and readings in French.

140C • The Anti-Renaissance (4) Staff
French literature of the latter part of the 16th century is that of a country wrought asunder by civil and religious strife. Its study, nevertheless, brings one in contact with a great poetic movement, the early Baroque, and with a very great author and sage, Montaigne. Lectures and readings in French.

141X • Rabelais in Translation (4) Staff
A study of the works of Rabelais in an attempt to discover in them the expression of a popular culture parallel to official literary culture but most often excluded from officially recognized literature. Lectures and readings in English.

150A • Mannerism and Classicism (4) Tobin
Analysis of literary, philosophical, and cultural trends of early seventeenth century. Esthetics of Mannerism (Theophile, Saint-Amant), Classicism (Malherbe, Racan), Preciosite (Voiture, Montausier), French Mannerist tragedy (Rotrou, Corneille). Birth of modern Rationalism and importance of Neo-Stoicism in Descartes' works. Class reading and discussions supplemented by lectures on aspects of culture (religion, politics, society). Documentary films used. Lectures and readings in French.

150B • Baroque (4) Tobin
The rise of baroque spirit in all literary genres between 1660 and 1680. Pascal, Racine, Moliere, La Fontaine, La Rochefoucauld, Mme de La Fayette studied as examples of that ideal which attempts a balance, through tension, of Mannerism and Classicism. Discussions of baroque art and architecture will supplement literary analyses. Lectures and readings in French.

151X • Emotion and Intellect in 17th Century French Culture (4) Staff
An exploration of selected aspects of scientific, artistic, political, philosophical and religious life in 17th century France. Lectures and readings in English.

152 • Aspects of the Seventeenth Century (4) Tobin
Prerequisite: French/109B. A course whose specialized focus changes from quarter to quarter. May be repeated with a different topic for a maximum of 12 units. Lectures and readings in French.

160A—B—C • The Eighteenth Century (3,3,3) Temmer, Sturm
Development of libertine thought traced from Saint Evremond, Fontenelle and Bayle to theories of Montesquieu, Diderot, Voltaire, Rousseau. Problems of the emergence of the novel, autobiography, satire studied. Lectures and readings in French.

161X • The Utopian Tradition (4) Sturm
Beginning with utopian thought in th French Enlightenment (Diderot, Rousseau, Voltaire, and others), this course will analyze the aspirations of major writers like Saint-Simon, Fourier, Sartre, and Marcuse towards a socially perfect order and the problems arising therefrom. Lectures and readings in English.

162X • Contrasts in Wit and Satire: Candide and Rasselas (4) Temmer
The course will focus on the stylistic and thematic structure of Voltaire's masterpiece as well as on his refutation of philosophical optimism. Samuel Johnson's *Rasselas* will be studied by way of contrast. Lectures and readings in English.

163X • Diderot on Sex, Fiction and Role Playing (4)Temmer
A study of Diderot's concern with human happiness (sexual freedom in *The Supplement to the Voyage of Bougainville)*, with the theory and practice of the novel *(Jacques the Fatalist)*, with acting on the stage *(Paradox on the Comedian)*, with the alienated man *(Rameau's Nephew)*. Lectures and readings in English.

164X • Rousseau and the Confessional Urge (4) Temmer
An in-depth analysis of Rousseau's *Confessions*, one of the most influential documents of Western Civilization. Also to be studied: *The Fifth reverie of the solitary wanderer*. Lectures and readings in English.

170A • The Nineteenth Century I (4) Walker
Romanticism to realism. French poetry and prose between 1800 and 1850. Readings of such authors as Chateaubriand, Lamartine, Vigny, Hugo, Musset, Stendhal, Balzac. Chief qualities of the works selected, major themes, images, techniques, kinds of creative activity involved, emergent visions of reality. Lectures and readings in French.

170B • The Nineteenth Century II (4) Walker
Realism, the Parnasse, the beginnings of modern poetry. French verse and prose of the middle of the nineteenth century. Readings of such authors as Baudelaire, Gautier, Merimee, Leconte de Lisle, Nerval, Michelet, Flaubert. Lectures and readings in French.

170C • The Nineteenth Century III (4) Walker
Naturalism, symbolism, decadence, the *fin de siecle*. French poetry and prose from 1870 to 1900. Readings of such authors as Zola, Mallarme, Verlaine, Corbiere, Rimbaud, Laforgue. Lectures and readings in French.

170X • Nineteenth Century French Literature in Translation (4) Walker
Readings of selected nineteenth century French authors such as Hugo, Baudelaire, Mallarme, Verlaine, Rimbaud, Chateaubriand, Balzac, Stendhal, Flaubert, Zola. Lectures and readings in English.

170Y—Z • The Nineteenth Century French Novel in Translation. (4,4) Walker, Delattre
Readings of works of 19th-century French novelists. First quarter: Balzac, Stendhal, Hugo and other writers of the first half of the century. Second quarter: Flaubert, Zola, and other writers of the second half of the century. Principal themes, techniques, varieties of creative activity, relationship with other arts and with society. Lectures and readings in English.

171 • The Romantic Movement in France (4) Delattre
A study of French romanticism as expressed in literature, art, and music and in the social and political life of France between 1820 and 1835. Lectures and readings in French.

172X • Literature and the Rise of the Modern World (4) Walker
A study of the role played by the creative artist in the process of cultural change: the impact of change on the artist; the opportunities that change gives the artist; the artist as world creator. Lectures and readings in English.

173 • Balzac (4) Delattre
Prerequisite: French/109C. A study of selected works by one of the world's greatest novelists and one of the chief founders of modern fiction. Lectures and readings in French.

174 • Le Roman d'education au 19ieme siecle (4) Delattre, Walker
A study of novels dealing with the theme of the worldly education of a young man or woman.

174X • Aspects of the French Novel (4) Delattre, Murray, Walker.
A course whose specialized focus changes from quarter to quarter but in which reading assignments will be limited to major works by major authors, mostly of the 19th and 20th centuries, e.g., Balzac, Stendhal, Flaubert, Zola, Proust, Gide, Camus. Lectures and readings in English.

176X • The Symbolist Heritage (4) Walker, Cushing
A study of key poems and prose texts which throw light on aspects of 19th century Symbolism. Lectures and readings in English.

177X • Literature and Religion in Modern France (4) Walker
Religious aspects of French fiction and poetry since the French Revolution. Readings of selected authors such as Hugho, Balzac, Flaubert, Baudelaire, Huysmans, Claudel, Gide, and Mauriac. Lectures and readings in English.

178X—Y • French Film: Theory and Practice (4,4) Greene
A study of the various film movements in France (Surrealism, New Wave, Cinema verite, Political filmmaking of the 1960's) through the analyses of texts (especially Cocteau, Bazin, the Dziga Vertov group) and films (by Coctau, Renoir, Godard). Lectures and readings in English.

179X • Decadence (4) Murray, Greene
A study of the decadent phenomenon as seen in such writers as Lautreamont, Proust, Gide, Celine, Genet, selections to be based on available translations. The course will be of interest to students in art and music as well as in literature. Lectures and readings in English.

180A—B—C • Contemporary Novel, Essay, and Theater (4,4,4) Murray, Greene
An introduction to the major currents and figures in twentieth century literature. Such authors as Proust, Gide, Sartre, Malraux, Camus, Ionesco, Beckett, Genet, Apollinaire studied. Lectures and readings in French.

180X—Y • Representative Works of French Literature in Translation (4,4) Staff
Reading of works of contemporary writers such as Camus, Sartre, Beckett and Genet. Investigation of the socio-aesthetic problems posed by these writers. Lectures and readings in English.

182X—Y • The Twentieth Century French Novel in Translation (4,4) Cushing
The evolution of contemporary French fiction. First Quarter: the influence of Symbolism — Valery, Gide, Mauriac, and others. Second Quarter: the growth of the New Novel — Breton, Sartre, Robbe-Grillet, Beckett, and others. Lectures and readings in English.

183X • An Introduction to Structuralism (4) Staff
An introduction to one of the main intellectual movements of our times as it may be grasped through the writings of Levi-Strauss, Barthes, Piaget, Todorov, and others. This course should be of interest not only to students of French culture but to majors in English and other literatures, Art, History, Linguistics, Mathematics, Physics, Chemistry, Biology and the Social Sciences. Lectures and readings in English.

184A—B • Contemporary French Poetry (4,4) Cushing
From Bauderlaire to Prevert: a critical study of significant poems since 1857, against the background of Parnassian, Symbolist, Cubist and Surrealist ideas. Study of poetic materials and techniques. Several short papers, explications de texte, practice in translation. Lectures and readings in French.

184X • French Novel Into Film (4) Staff
The different ways of transforming a novel into a feature film will be studied. Lectures and readings in English.

184Y • French Film Directors (4) Staff
A study of selected works of two or three major French film directors such as Rene Clair, Robert Bresson, Jean Vigo, Alain Resnais, Claude Chabrol, Max Ophuls. Francois Truffaut, Jean Cocteau, Jean Renoir, and Eric Rohmer. Lectures and readings in English.

184Z • Key Works of the French Cinema (4) Staff
A study of eight or so films (each by a different director), each of which is both important and artistically successful in itself and illustrative of a period or a tendency in the history of the French film. Lectures and readings in English.

185X • Contemporary French Theatre in Translation (4) Staff
A study of the major French dramatists of the twentieth century, such as Sartre, Camus, Artaud, Beckett, Ionesco, Genet. Emphasis placed on contemporary plays. Lectures and read-

ings in English.

186 • Poets and Painters in 20th Century France (4) Cushing
Prerequisite: A reading knowledge of French, some background in early 20th-century European art, or consent of instructor. A study of the relationships between poets and painters, concentrating on collaborations (illustrated books or *livres de peintres*). The confrontation between verbal and visual images will be a main concern of the course. Guest lecturers from the Art Department and the library will discuss aesthetic and technical aspects of the Book. Lectures in English, readings in French. French majors please note that no more than eight units of French courses taught in English may be counted toward the major.

186X • Beckett and Godard: The Difficulties of Creation (4) Greene
An examination of the way these two artists, working in different fields, are questioning the nature of their art and entertaining the idea that further creation may no longer be possible. Lectures and readings in English.

187 • Surrealist Film (4) Cushing, Greene
A study of the Surrealist film of the 1920's and 1930's. Complementary Surrealist texts read. Course designed for upperclassmen and graduate students. Lectures and readings in French.

187X • French Cinema of the 1930's (4) Staff
Themes and development of French cinema from 1930 to the outbreak of World War II. Lectures and readings in English.

187Y • French Cinema Since World War II (4) Staff
Themes and cinematic innovations in post war cinema of France. Lectures and readings in English.

188 • The French Art Song from Symbolism to Surrealism (4) Cushing and Hsu
Prerequisite: Open to Music and French majors or permission of the instructors. An interdisciplinary study in text-music relationship from Faure to Poulenc; from Baudelaire to Eluard. Lectures in English, readings in French. **May be taken for credit only once as either French/188 or Music/188.** French majors please note that no more than eight units of French courses taught in English may be counted toward the major.

188X • Contemporary French Drama and Film in Translation (4) Greene
An examination of contemporary currents in French theater and film. Concentrates on theater of the absurd—Beckett, Ionesco and Genet, as well as such filmmakers as Godard. Lectures and readings in English.

189Y—Z • Personal Documentary: From Vertov to Cinema verite (4,4) Greene
The concept of film documentary will be studied and films of various directors shown. Among the filmmakers included are Dziga Vertov, Jean Rouch, Chris Marker, Luis Bunuel. Lectures and readings in English.

***199 • Independent Studies in French** (1-5) Staff
Individual investigations in literary fields. 199 Courses are limited to no more than five units in one quarter, no more than 15 units per year, and no more than 30 units total.

Graduate Courses

203 • Advanced French Phonetics (3) Malecot
An accelerated review of the principles covered in French 103A—B—C, but without laboratory practice. An introduction to acoustic phonetics.

204A • History of French Language (3) Ashby
Prerequisite: One year of college Latin or equivalent or consent of instructor. French/203 or equivalent. The linguistic history of French, stressing the major changes in the phonological, morphological, and syntactic systems from Latin to Modern French

204B • Old French Philology (3) Ashby
Prerequisite: One year of college Latin or equivalent or consent of instructor. French/203 or equivalent and French/204A. Reading and linguistic analysis of old French Texts.

205 • Bibliography and Research Techniques (1) Tobin
A brief introduction to bibliographical theory and practice, the principal bibliographies and other sources of information useful for the study of French literature, and ways of obtaining different types of information having to do with French literature. Recommended for all graduate students concerned with, or specializing in French literature.

207A • Physiological Phonetics (3) Malecot
A survey of research leading to the specification of the principal articulatory patterns of speech; bibliography; individual projects. Given in English if students from other departments are registered.

207B • Acoustic Phonetics (3) Malecot
A survey of research leading to the specification of the acoustic cues for speech; bibliography; individual projects. Given in English if students from other departments are registered.

207C • Descriptive Phonetics (3) Malecot
Prerequisite: French/103A or equivalent. A review of the work of the principal French phoneticians since 1900; a critical analysis of research methods and presently accepted principles; bibliography; individual projects. Given in French.

209A—B • Linguistics (3,3) Malecot
A brief history of linguistics followed by a more detailed analysis of the contributions of De Saussure, Martinet, Dubois, and Ruwet. Practice in applying various methods of analysis to French sentences.

232A—B • French Literary Criticism (3,3) Staff
An examination of the history of French literary criticism and an inquiry into the different approaches employed by contemporary critics.

236 • Studies in Medieval Literature (3) Maddox
Selected topics for research and discussion based on texts drawn from saints' lives, epic, courtly romance, lyric poetry, drama, and chronicles. May be repeated with a different topic for a maximum of eighteen units.

240 • Studies in the Sixteenth Century (3) Staff
A. Rabelais, B. Pleiade, C. Montaigne, D. French Renaissance Theatre, E. Renaissance Court poetry. This course may be repeated for a maximum of 15 units.

250 • Studies in the Seventeenth Century (3) Tobin
A. Corneille, B—1. Racine B—2. Racine, C. Moliere, D. Pascal, E. LaFontaine, F. Moralistes, G. Classical Hero, H. The Baroque. This course may be repeated for a maximum of twenty-seven units.

260 • Studies in the Eighteenth Century (3) Temmer, Sturm
A. Voltaire, B. Diderot, C. Rousseau, D. Rousseau, E. The Novel, F. Political Thought in Belletristic Literature, G. Utopia in the *Siecle des Lumieres*. This course may be repeated for a maximum of twenty-one units.

261 • Rousseau and His Critics (3) Temmer
A study of Rousseau's major works as point of departure in an analysis of the historical development of criticism on these works. Emphasis given to modern critical views.

270 • Studies in the Nineteenth Century (3) Walker, Delattre, Cushing
Study in depth of selected texts of the nineteenth century with emphasis on A. Balzac, B. Stendhal, C. Flaubert, D—1. Zola, D—2. Zola, E. Romantic Poetry, F. Baudelaire, G. Symbolism, H. Literature of the Second Empire, I. Theater, J. Hugo. This course may be repeated for a maximum of thirty-three units.

280 • Studies in the Twentieth Century (3) Cushing, Murray, Greene
A—1, Proust, A—2. Proust, B. Gide, C. Apollinaire, D—1. Existentialism, D—2 Existentialism, F. Theatre, G. Essay, H. Surrealism, I. Mallarme-Valery, J. Contemporary Criticism, K. Camus. May be repeated for a maximum of thirty-six units.

289 • La litterature maudite (3) Greene
The question of "la litterature maudite" from Sade to the present examined. Nerval, Lautreamont, Baudelaire, Genet also studied.

400 • Introduction to Translation, French to English (4) Westman
Prerequisite: B.A. or consent of instructor. Translation of selected passages from French into English with emphasis on economic, political, and scientific texts. Course is open to all qualified graduate students.

401 • Introduction to Translation, English to French (4) Westman
Prerequisite: Limited to students enrolled in the post-graduate translator-interpreter program in French. Intended for students who are not native speakers of French. Translation of short passages from newspapers, magazines, and commercial correspondence.

410 • Introduction to Interpretation, French to English (4) Westman
Prerequisite: French/400. Consecutive interpretation and precis writing; simultaneous interpretation without electronic equipment.

411 • Introduction to Interpretation, English to French (4) Westman
Prerequisite: French/400, 401, 410. Consecutive interpretation. Whispering and public speaking with electronic equipment.

420 • Advanced Translation, French to English (6) Westman
Prerequisite: French/400, 410, and 411. Individual translation project. Student translates 30-50 pages into English.

421 • Conference Interpreting (6) Westman
Prerequisite: French/400, 401, 410, and 411. Interpretation of entire speeches into English, using tapes and equipment in the Language Laboratory.

596 • Directed Reading and Research (2-6) Staff
Individual tutorial. Instructor usually student's major professor. Students doing initial research on the doctoral dissertation may sign up for this course. Students must take a minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in 596. Letter grade given.

597 • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-12) Staff
Instructor normally should be the student's major professor

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*See L-2 for 198/199 independent studies unit limitations.

or chairman of his doctoral committee. S/U grade.

598 • Master's Thesis Research and Preparation (1-12) Staff
Only for research underlying thesis, writing thesis. Instructor should be chairman of student's thesis committee. S/U grade given. Since student is granted six units' credit toward the degree, no unit credit given.

599 • Dissertation Research and Preparation (1-12) Staff
Only for the writing of the doctoral dissertation. Instructor should be chairman of student's doctoral committee. Grade of S/U given.

Italian

Lower Division courses

Please note: It is highly recommended that students take the Italian Placement Examination administered by the Department to determine the level of Italian they should take in the Department's language program.

Students wishing to being the study of Italian may now choose between Italian/1-6 and Italian/**14 • Individualized Instruction 1-6.** To help them decide which they may prefer, the main characteristics of each course are listed below:

Comparison of Italian/1-6 and 14

Italian/1-6	Italian/14
All students progress at the same rate of speed and cover the same amount of material.	Each student progresses at his own rate of speed and covers differing amounts of material.
At the end of the quarter all students who pass receive 4 units of credit.	At the end of the quarter each student receives the units of credit he has earned (from an expected minimum of 1 to a theoretical maximum of 24).
Mastery of each instructional unit is encouraged but not required before the student proceeds to the next. As a result: the final grades for the quarter will be in the traditional range of A through F.	Mastery of each instructional unit is required before the student proceeds to the next. As a result: the final grade for the quarter will normally be A or B for all students.
Class and laboratory attendance are required.	Class (5 meetings per week) and laboratory attendance are not controlled but highly recommended.
The instructor is primarily responsible for directing student learning.	The students are primarily responsible for directing his own learning (receiving suggested study procedures and individual guidance when needed). Also new vocabulary patterns are presented before the individual tackles them.
Tests are given to all students during regular classes at fixed times.	Tests are given outside regular class hours to each student when he is ready.

To sum up Italian/1-6 is best for those students who prefer to stay with a group, with maximum guidance from an instructor, while Italian/14 is for those who wish to assume more responsibility for their own learning. Italian/14 is also for those who prefer to advance at a pace other than that imposed in Italian/1-6 or — to put it another way — who wish to earn either fewer or more than four units of credit per quarter (each student will wish to adjust the remaining course load according to the approximated number of units planned in Italian/14).

1 • Elementary Italian (4) Staff
Beginner's course.

2 • Elementary Italian (4) Staff
(Continuation of 1.)

3 • Elementary Italian (4) Staff
(Continuation of 2.)

4 • Intermediate Italian (4) Staff
(Continuation of 3.)

5 • Intermediate Italian (4) Staff
(Continuation of 4.)

6 • Intermediate Italian (4) Staff
(Continuation of 5.)

8A—B—C • Italian Conversation (2,2,2) Staff
Prerequisite: Italian 3 or consent of instructor.

14 • Individualized Instruction 1-6 (1-24) Zanghi
A student will proceed at his own pace in completing each achievement level which is equivalent to one quarter of Italian. Students attend two group meetings and three consultations per week. Students must complete one level achieve-

ment unit before proceeding to the next level. Students earn four quarter units of credit for each level of achievement unit completed. May be repeated for a maximum of 24 units.

Upper Division courses

Prerequisite to all Upper Division Italian courses, except where specially noted: Italian 6 or consent of the department.

101A—B—C • Conversation and Composition (3,3,3) Rossi
Original composition, translation, discussion of selected passages from Italian literature.

110A—B—C • Dante: La Divina Commedia (4,4,4) Bonadeo
Dante's *The Divine Comedy: Inferno, Purgatory*, and *Paradise* studied in their broad historical and moral contexts based on a close reading of the text. Lectures and readings in Italian.

114X—Y—Z • Masterpieces of the Italian Middle Ages in Translation (4,4,4) Bonadeo
A study of the spiritual, moral and material values in the world of the Italian Middle Ages through the works of Dante, Petrarch, and Boccaccio. Lectures and readings in English.

115A—B—C • Italian Literature of the Nineteenth Century (4,4,4) Bonadeo, Lawton
Covers the various currents of Italian Romanticism from the early romantics (Foscolo, Leopardi, Manzoni) to the poetry of the end of the century represented by poets such as Pascoli and D'Annunzio. Genres include fiction, poetry and autobiography. Lectures and readings in Italian.

116X • Machiavelli (4) Bonadeo
A study of class conflicts, the uses of power, and the nature of war in the works and times of Machiavelli. Lectures and readings in English.

116Y • Love and Chivalry in the Italian Renaissance (4) Bonadeo
A study of the practice and ideal of love and chivalry within the social context of the times of Ariosto and Castiglione. Lectures and readings in English.

116Z • Love and Society in the Italian Renaissance (4) Bonadeo
A study of moral and social conflicts and aspirations in the poetry of Michelangelo and the epic of Tasso. Lectures and readings in English.

118 • Modern Italian Novel (4) Rossi
Discussion of the major Italian novelists of the twentieth century such as Pirandello, Moravia, Tomasi, Vittorini, Pavese. The history of the novel in modern times also discussed. Lectures and readings in Italian.

118X • Modern Italian Novel in Translation (4) Staff
Discussion of the major Italian novelists of the 20th century such as Pirandello, Moravia, Tomasi, Vittorini, Pavese. The history of the novel in modern times also discussed. Lectures and readings in English.

119 • Contemporary Italian Poetry (4) Rossi
The course deals mainly with the works of Ungaretti, Montale, Quasimodo, but references will be made to Italian, French, and American poetry of the nineteenth century in order to trace the origin of modern Italian poetry. Lectures and readings in Italian.

139X—Y—Z • Survey of Literature in Translation (4,4,4) Lawton
First quarter: Medieval and Renaissance periods with readings from Dante, Petrarch, Boccaccio and Machiavelli. Second quarter: Literature of the High Renaissance and seventeenth and eighteenth centuries. Third quarter: Romantic period and the twentieth century, including works of Pirandello and Moravia as well as the theatre, the novel, poetry, post-war Italian film. Lectures and readings in English.

180X—Y—Z • World Cinema (4,4,4) Lawton
Prerequisite: Drama/46; 146 recommended. Survey of the International Tradition in Cinema. 1st quarter: the contributions of major international film traditions to the universal art of film. 2nd quarter: major American genres, such as the Western, the Gangster film, and Film noir, as well as a study of the American hero. 3rd quarter: Italian cinema since World War II. Not open to Italian majors.

188X—Y • Introduction to Italian Cinema (4,4) Lawton
Introduction to major trends in Italian cinema from the silent period to the Sixties. Lectures and readings in English.

***199 • Independent Studies In Italian** (1-5) Staff
Individual investigations in literary fields. 199 Courses are limited to no more than five units in one quarter, no more than 15 units per year, and no more than 30 units total.

596 • Directed Reading and Research (1-6) Staff

French literature and film in English translation

Reg/Courses for which no knowledge of French is required.

An undergraduate major in French may enroll for credit in two quarters of any French literature or film courses in English translation.

25X • Seminar on French Literature in Translation (4) Staff
Discussion of subjects of major interest pertaining to French literature and French culture in general—for example, Surrealism, Existentialism, the Avant-garde, the French Film, Modern French Drama, French Sources of American Culture. Subject will vary with instructor. *This course is open only to freshmen and sophomores.*

102X • Social Attitudes and Language (4) Ashby
A new approach to language, stressing the development of major modern Western languages, as affected by social and cultural factors.

109X—Y—Z • Survey of French Literature in Translation (4,4,4) Staff
Authors, genres, themes, and movements which have had the greatest impact upon world literature will be stressed: e.g., the French epic, the Tristan legend, the Arthurian romances, the *Romance of the Rose,* Montaigne, French Classicism, *Candide,* Baudelaire, Proust, Sarte and others.

137X • Love In the Medieval French Narrative (4) Maddox
A study of seven medieval French guides to the art of love and of the thematic treatment of love in a variety of texts, including *Tristan et Iseut,* the lays of Marie de France, the romances of Chretien de Troyes, *The Romance of the Rose, Aucassin and Nicolette,* and the *fabliaux*.

138X • The Medieval French Drama (4) Maddox
A study of the origins of Medieval European drama and of the development, staging, and critical theory of French drama with readings of major dramatic works to 1500.

141X • Rabelais in Translation (4) Staff
A study of the works of Rabelais in an attempt to discover in them the expression of a popular culture parallel to official literary culture but most often excluded from officially recognized literature.

151X • Emotion and Intellect in 17th Century French Culture (4) Staff
An exploration of selected aspects of scientific, artistic, political, philosophical and religious life in 17th century France.

161X • The Utopian Tradition (4) Sturm
Beginning with utopian thought in the French Enlightenment (Diderot, Rousseau, Voltaire, and others), this course will analyze the aspirations of major writers like Saint-Simon, Fourier, Sartre, and Marcuse towards a socially perfect order and the problems arising therefrom.

162X • Contrasts in Wit and Satire: Candide and Rasselas (4) Temmer
The course will focus on the stylistic and thematic structure of Voltaire's masterpiece as well as on his refutation of philosophical optimism. Samuel Johnson's *Rasselas* will be studied by way of contrast.

163X • Diderot on Sex, Fiction and Role-Playing (4) Temmer
A study of Diderot's concern with human happiness (sexual freedom in *The Supplement to the Voyage of Bougainville*), with the theory and practice of the novel (*Jacques the Fatalist*), with acting on the stage (*Paradox on the Comedian*), with the alienated man (*Rameau's Nephew*).

164X • Rousseau and the Confessional Urge (4) Temmer
An in-depth analysis of Rousseau's *Confessions*, one of the most influential documents of Western Civilization. Also to be studied: *The Fifth reverie of the solitary wanderer.*

170X • Nineteenth Century French Literature in Translation (4) Walker
Readings, in translation, of selected nineteenth century French authors such as Hugo, Baudelaire, Mallarme, Verlaine, Rimbaud, Chateaubriand, Balzac, Stendhal, Flaubert, Zola.

170Y—Z • The Nineteenth Century French Novel in Translation (4,4) Delattre, Walker
Readings of works of 19th-century French novelists. First quarter: Balzac, Stendhal, Hugo and other writers of the first half of the century. Second quarter: Flaubert, Zola and other writers of the second half of the century. Principal themes, techniques, varieties of creative activity, relationship with other arts and with society.

172X • Literature and the Rise of the Modern World (4) Walker
A study of the role played by the creative artist in the process of cultural change: the impact of change on the artist; the opportunities that change gives the artist; the artist as world creator.

176X • The Symbolist Heritage (4) Walker, Cushing
A study of key poems and prose texts which throw light on aspects of 19th century Symbolism.

177X • Literature and Religion in Modern France (4) Walker
Religious aspects of French fiction and poetry since the French Revolution. Readings of selected authors such as Hugo, Balzac, Flaubert, Baudelaire, Huysmans, Claudel, Gide, and Mauriac.

178X—Y • French Film: Theory and Practice (4,4) Greene
A study of the various film movements in France (Surrealism, New Wave, Cinema verite, Political filmmaking of the 1960's) through the analyses of texts (especially Cocteau, Bazin, the Dziga Vertov group) and films (by Cocteau, Renoir, Godard).

179X • Decadence (4) Murray, Greene
A study of the decadent phenomenon as seen in such writers as Lautreamont, Proust, Gide, Celine, Genet, selections to be based on available translations. The course will be of interest

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*See L-2 for 198/199 independent studies unit limitations.

to students in art and music as well as in literature.

180X—Y • Representative Works of French Literature in Translation (4,4) Staff
Reading of works of contemporary writers such as Camus, Sartre, Beckett and Genet. Investigation of the socio-aesthetic problems posed by these writers.

182X—Y • The Twentieth Century French Novel in Translation (4,4) Cushing
The evolution of contemporary French fiction. First Quarter: the influence of Symbolism—Valery, Gide, Mauriac, and others. Second Quarter: the growth of the New Novel—Breton, Sartre, Robbe-Grillet, Beckett, and others.

183X • An Introduction to Structuralism (4) Staff
An introduction to one of the main intellectual movements of our times as it may be grasped through the writings of Levi-Strauss, Barthes, Piaget, Todorov, and others. This course should be of interest not only to students in French culture but to majors in English and other literatures, Art, History, Linguistics, Mathematics, Physics, Chemistry, Biology, and the Social Sciences.

184X • French Novel Into Film (4) Staff
The different ways of transforming a novel into a feature film will be studied.

184Y • French Film Directors (4) Staff
A study of selected works of two or three major French film directors such as Rene Clair, Robert Bresson, Jean Vigo, Alain Resnais, Claude Chabrol, Max Ophuls, Francois Truffaut, Jean Cocteau, Jean Renoir, and Eric Rohmer.

184Z • Key Works of the French Cinema (4) Staff
A study of eight or so films (each by a different director), each of which is both important and artistically successful in itself and illustrative of a period or a tendency in the history of the French film.

185X • Contemporary French Theatre in Translation (4) Staff
A study of the major French dramatists of the twentieth century, such as Sarte, Camus, Artaud, Beckett, Ionesco, Genet. Emphasis placed on contemporary plays.

186X • Beckett and Godard: The Difficulties of Creation (4) Greene
An examination of the way these two artists, working in different fields, are questioning the nature of their art and entertaining the idea that further creation may no longer be possible.

187X • French Cinema of the 1930's (4) Staff
Themes and development of French cinema from 1930 to the outbreak of World War II.

187Y • French Cinema Since World War II (4) Staff
Themes and cinematic innovations in post war cinema of France.

188X • Contemporary French Drama and Film in Translation (4) Greene
An examination of contemporary currents in French theater and film. Concentrates on theater of the absurd — Beckett, Ionesco and Genet, as well as such filmmakers as Godard.

189Y—Z • Personal Documentary: From Vertov to Cinema verite (4,4) Greene
The concept of film documentary will be studied and films of various directors shown. Among the filmmakers included are Dziga Vertov, Jean Rouch, Chris Marker, Luis Bunuel.

Italian

Literature and Film in English translation. (Courses for which no knowledge of Italian is required.)

114X—Y—Z • Masterpieces of the Italian Middle Ages in Translation (4,4,4) Bonadeo
A study of the spiritual, moral and material values in the world of the Italian Middle Ages through the works of Dante, Petrarch, and Boccaccio.

116X • Machiavelli (4) Bonadeo
A study of class conflicts, the uses of power, and the nature of war in the works and times of Machiavelli.

116Y • Love and Chivalry in the Italian Renaissance (4) Bonadeo
A study of the practice and ideal of love and chivalry within the social context of the times of Ariosto and Castiglione.

116Z • Love and Society in the Italian Renaissance (4) Bonadeo
A study of moral and social conflicts and aspirations in the poetry of Michelangelo and the epic of Tasso.

118X • Modern Italian Novel in Translation (4) Staff
Discussion of the major Italian novelists of the 20th century such as Pirandello, Moravia, Tomasi, Vittorini, Pavese. The history of the novel in modern times also discussed.

139X—Y—Z • Survey of Literature in Translation (4,4,4) Lawton
First quarter: Medieval and Renaissance periods with readings from Dante, Petrarch, Boccaccio and Machiavelli. Second quarter: Literature of the High Renaissance and seventeenth and eighteenth centuries. Third quarter: Romantic period and the twentieth century, including works of Pirandello and Moravia as well as the theatre, the novel, poetry, post-war Italian film.

180X—Y—Z • World Cinema (4,4,4) Lawton
Prerequisite: Drama/46; 146 recommended. Survey of the International Tradition in Cinema. 1st quarter: the contributions of major international film traditions to the universal art of film. 2nd quarter: major American genres, such as the Western, the Gangster film, and Film noir, as well as a study of the American hero. 3rd quarter: Italian cinema since World War II. Not open to Italian majors.

188X—Y • Introduction to Italian Cinema (4,4) Lawton
Introduction to major trends in Italian cinema from the silent period to the Sixties.

Related Courses in Education

SF 390 • Curriculum and Instructional Procedures and Materials Used in the Teaching of French (3) Staff
Prerequisite: Major or minor in French. Required of candidates for the secondary credential with a major or minor in French.

SF 392 • Student Teaching: French (3-6) Staff
Prerequisite: Admission to secondary credential program and consent of instructor. Supervised teaching at the secondary level in French.

Geography

Professors

David S. Simonett, Ph.D., Sydney, Australia; remote sensing, soil geography, land use planning, (Chairman).

Assistant Professors

Christopher Clayton, Ph.D., Clark; economic geography, urban transportation, environmental perception.

Jeffrey C. Dozier, Ph.D., Michigan; hydrology, physiography, quantitative methods, computer applications.

John E. Estes, Ph.D., UCLA; remote sensing, Soviet Union, regional resource analysis, arid lands.

Alan H. Strahler, Ph.D., Johns Hopkins; biogeography, quantitative methods.

Research Associates

Sidney R. Frank, M.A., C.C.M.; Research Associate in Meteorology.

Arthur N. Strahler, Ph.D.; Research Associate in Geography and Geology.

Concerns of the Department

Geographers investigate the surface of the earth as the home of humanity. The discipline of geography treats our environment as a system, primarily from the point of view of space through time. Geography attempts to explain the interrelationships between subsystems of our physical environment, and humanity's distribution over the earth in terms of spatial interactions with various physical and cultural phenomena. Geography is an approach to knowledge which is essentially a synthesis emphasizing spatial and ecological considerations.

The Geography major is designed to provide a fundamental background for students seeking an interdisciplinary understanding of the world; to offer training for a career in business and government as well as teaching in Geography and the Social Sciences; to prepare students for graduate studies in theoretical and applied work in Geography, and to prepare students to conduct original research.

The program is organized around systematic, technical, and regional analyses. Students will normally acquire familiarity with elements of both systematic analysis and techniques. Students interested in becoming professional geographers are encouraged to develop a heavy additional concentration in one or more related disciplines. Specific individual programs will be worked out in consultation with advisers.

Bachelor of Arts

Preparation for the major

Required: Geography/2, 3, and Biology/1A or 20 or 20Z or 21 or Botany/20 or Environmental Studies/2 or Geology/2, and 2L.

Recommended: A minimum of one course in statistics and Geography/4 are strongly recommended; Geology/117.

Upper Division major:

36 Upper Division units in Geography. Geography/101 and 101L are required of all majors. In addition, eight units from systematic courses (e.g., 105, 106, 110, 111, 112, 113, 114, 135, 160, 161, 162, 165, 180, 195, 198 and 199), eight units from techniques courses (e.g., 115A, 115B, 117, 118A, 118B, 119, 121, 170, 170L, 171, and 171L) and at least four units from regional offerings (e.g., 102, 141, 148, 150, 154 and 155). A maximum of eight upper division units may be included for Geography credit from approved courses in closely related fields, except in cases of credentials programs.

Career Opportunites

This major is designed to provide undergraduate preparation leading to careers in: 1) government, both local and state offices, in urban and regional planning agencies, in agencies of the Federal Governments, including HUD, E.P.A., DOD, DOT, Interior, etc., the Foreign Service and in international organizations; 2) business and consultants to business; 3) College and University teaching and research with three to six additional years in a graduate program completing programs leading to an M.A. and Ph.D.; 4) primary and secondary level teaching with one additional year of education required in some areas; and, 5) specialized areas such as Remote Sensing and Aerial Photography, Resource Evaluation, Urban and Regional Planning, Industrial Location, Marketing Resource, Transportation and Cartography.

Teaching Credentials

Students who complete a major in geography may be eligible for pursuing a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office Room 1180 Phelps Hall.

Correspondence Information

Department of Geography, Ellison Hall, Rm. 3611, University of California, Santa Barbara, California 93106. Phone: 805/961-2344.

Geography

Lower Division courses

1FS • Freshman Seminar (3) Staff
Seminar, three hours. An introductio to selected problems and issues related to man-environment relations researched and investigated by professional geographers.

2 • Introduction to Human Geography (4) Staff
Lecture, three hours. Discussion, one hour. An introduction to the geography of man stressing concepts basic to understanding the variety of man-land relationships arising from the interaction of culture and the physical environment.

3 • Elements of Physical Geography (4) Dozier, Strahler
Lecture, three hours. Discussion, one hour. Survey of man's physical environment. Distribution and interrelationships of atmospheric phenomena, climate, soils, plant and animal communities and landforms.

4 • Introduction to Economic Geography (4) Clayton
Lecture, three hours. Discussion, one hour. Analysis of world and national spatial distributions associated with man's economic activities. Distributions of natural resources and industry, agricultural land use patterns, and patterns of trade and communication.

Upper Division courses

101 • Spatial Analysis (4) Clayton
Prerequisites: Geography/3, 4 or consent of instructor. Must be taken concurrently with Geography/101L. Lecture, three hours. Required of all majors. Introduction to the science of Geography and geographic research, including a review of core concepts, theories, and methodologies important for spatial analysis.

101L • Spatial Analysis Laboratory (1) Clayton
Prerequisites: Geography/3, 4 or consent of instructor. Must be taken concurrently with Geography/101. Laboratory, three hours. Spatial concepts and measurement techniques as analyzed through exercises and analog modeling.

102 • World Regional Geography (4) Staff
Lecture, three hours. Survey of the geographic characteristics of the major regions.

105 • Principles of Economic Geography (4) Clayton
Prerequisite: Geography/4 or consent of instructor. Lecture, three hours. Analysis of the geographic aspects of production, consumption, and exchange.

106 • Urban Geography (4) Clayton
Lecture, three hours. Historical and contemporary analysis of concepts and problems relating to the distribution, function structure, and regional setting of urban centers.

110 • Introduction to Meteorology (4) Staff
Prerequisite: Geography/3 or equivalent. Basic physics and chemistry recommended. Lecture, three hours. An introduction to the dynamics of the earth's atmosphere. Energy exchange mechanisms, energy balance, condensation and precipitation processes, the dynamics of pressure and wind systems, and the distributions of weather disturbances. Discussions of instrumentation, mapping of synoptic patterns, local weather systems, and methods and consequences of weather modification experiments.

111 • Climatology (4) Dozier
Prerequisite: Geography/3 or consent of instructor. Lecture, three hours. Characteristics and distribution of climatic phenomena arising from interactions of the atmosphere and the earth's surface. Characteristics of climatic classification.

112 • Hydrology (4) Dozier
Prerequisite: Geography 3 or consent of instructor. Lecture, three hours. Nature of water cycle with emphasis on relationships among meteorological, surface water, and ground water phenomena. Problems of contamination, human responses to floods and river regimes.

113 • Physiography (4) Dozier
Prerequisite: Geography/3. Lecture, three hours. Dynamics of the development of landforms with emphasis on the problems of human utilization of the earth's surface.

114 • Geography of Soils (4) Simonett
Prerequisites: Geography/3, or Geology/2 or consent of instructor. Lecture, three hours. Soils and pedogenic processes. Soil classification and characteristics. Soil properties of importance to agriculture, earth science, and engineering.

115A • Geographic Photo Interpretation (4) Estes
Prerequisite: Geography/3 or consent of instructor. Introductory Botany and Geology recommended. Lecture, two hours. Laboratory, four hours. Interpretation of physical and cultural geographic phenomena as recorded by orbital and aerial sensing systems with emphasis on conventional aerial photography.

115B • Geographic Remote Sensing Techniques (4) Estes, Simonett
Prerequisite: Geography/115A or equivalent, and consent of instructor. Lecture, two hours. Laboratory, four hours. Interpretation of environmental phenomena recorded by orbital and aerial multispectral sensing systems with emphasis on non-visual and multiband sensing techniques.

117 • Geographic Field Techniques (4) Staff
Prerequisites: Geography/3 and consent of instructor. Lecture, one hour. Laboratory, six hours. Introduction of the basic methods of geographic survey and analysis.

118A • Introductory Cartography (4) Staff
Prerequisites: Geography/2 and 3 and/or consent of instructor. Lecture, two hours. Laboratory, four hours. Types of maps and map projections; Basic map compilation; Design; and Construction.

118B • Intermediate Cartography (4) Staff
Prerequisites: Geography/2, 3, 118A and/or consent of instructor. Lecture, two hours. Laboratory, four hours. Quantitative thematic mapping; Landform representation; Advanced map design; Map reproduction; Current trends in cartography.

119 • Selected Field Analysis in Geography (1) Staff
Prerequisites: Geography/3 and consent of instructor. Investigation of a selected geographic area. Conducted during a contiguous four day field trip (area and focus of study variable each time of offering). (May be repeated once for credit.)

121 • Advanced Topics in Geographic Field Techniques (4) Staff
Prerequaities: Geography/117 and/or consent of instructor. Lecture, one hour. Laboratory, six hours. An in-depth analysis of selected techniques and methodologies for geographic research. (May be repeated for credit with approval of department.)

135 • Principles of Environmental Planning (4) Clayton
Lecture, three hours. An introduction to the history and theory of urban, regional, national, and international planning for responsible use of the government. This course is the same as Environmental Studies 135.

141 • Geography of the Arid Lands (4) Estes
Prerequisites: Geography/2 and 3 recommended. Lecture, three hours. Comparative study of the arid-lands habitat. Physical and cultural complexes of the world's arid regions including climate, landforms, water, soils, vegetation, population and resources.

148 • California (4) Estes, Dozier
Lecture, three hours. The unique landscapes of California and the physical, cultural, and biotic processes which have produced them.

150 • North America (4) Staff
Lecture, three hours. Intensive study of the physical and cultural processes that have shaped and are shaping the landscapes of North America.

154 • Geography of Australia and New Zealand (4) Simonett
Lecture, three hours. Characteristics and problems of Australia and New Zealand. Discussions of physical, economic, cultural and regional problems and potentials.

155 • Geography of the Soviet Union (4) Estes
Lecture, three hours. A systematic regional approach to the study of the physical and cultural phenomena which characterize the Soviet Union.

160 • Environmental Conservation and Resource Management (4) Simonett
Prerequisite: Geography/3 or consent of instructor. Lecture, three hours. Evaluation of environmental resources and appraisal of the economic and related demands placed on such resources. Analysis of global and regional patterns of resource use and exploitation.

161 • Man in Nature (4) Strahler
Prerequisite: Geography/3. Lecture, three hours. Man as a major agent of biological change in the earth's ecosystems, both in contemprary times and in the recent past.

162 • Environmental Pollution (4) Strahler
Lecture, three hours. Human contamination of the environment. Air, water, land and space pollution and methods of pollution control.

165 • Biogeography (4) Strahler
Prerequisites: Geography/3 and four hours from the Biological Sciences. Lecture, three hours. Basic processes governing geographic distribution patterns of biota, including migration, evolution, isolation, and endemism. Biogeographic regions and their histories.

170 • Quantitative Methods in Geography (4) Clayton, Dozier, Strahler
Prerequisite: High-School algebra. Must be taken concurrently with Geography/170L. Lecture, three hours. Strongly recommended for all majors. Concepts and principles of basic quantitative data analysis as they relate to the fields of geography and environmental studies. Random variables; correlation and regression; point patterns and the concept of distance; graph theory; numerical solution methods.

170L • Laboratory in Quantitative Methods (2) Clayton, Dozier, Strahler
Must be taken concurrently with Geography/170. Seminar, one hour. Laboratory, three hours. Calculation and computation methods as appropriate to Geography/170. Simple skills in computer programming and data manipulation.

171 • Multivariate Methods in Geography (4) Clayton, Strahler
Prerequisites: Geography 170 or equivalent coursework and consent of instructor. Must be taken concurrently with Geography/171L. Lecture, three hours. Multivariate quantitative methods of data analysis of particular importance in geography. Linear and matrix algebra as applied to flow networks; trend surface analysis; factor analysis; discriminant analysis and point classification; clustering algorithms and techniques.

171L • Laboratory in Multivariate Methods (1) Clayton, Strahler
Laboratory, three hours. Must be taken concurrently with Geography/171. Calculation and computation methods as appropriate to Geography/171. Advanced skills in computer programming, use of statistical computer programs.

180 • Geography of Agriculture (4) Estes, Simonett
Prerequisites: Geography/2, 3 and/or consent of instructor. Lecture, three hours. An analysis of world agriculture patterns. Organization, classification, and locational elements of agricultural regions as they relate to contributing physical, cultural, and economic factors.

195 • Selected Problems in Geography (2-4) Staff
Prerequisites: Consent of instructor. Upper Division standing in Geography. Investigation of selected geographic factors of major significance to human environmental interactions. (Scope and emphasis variable each time offered. May be repeated once for credit.)

*198 • **Readings in Geography** (1-2) Staff
Prerequisites: Upper Division standing (84 or more units completed) and consent of instructor. The proposal for the study must be submitted to, and approved by, the Department Chairman. Designed to provide in-depth directed inquiry into a topic of interest to the student. Maximum of four units may be accumulated.

*199 • **Independent Studies** (1-5) Staff
Prerequisites: Upper Division standing (84 or more units completed) with a 3.0 grade point average within the major. The Proposal for the study must be submitted to, and approved by, the department chairman. Selected research under the direction of a faculty member. 199 courses are limited to no more than five units in one quarter and no more than 12 units total.

*See L-2 for 198/199 independent studies unit limitations.

Geological Sciences

Professors

Preston Cloud, Ph.D., Yale; biogeology, paleontology. (Emeritus, recalled to active duty)
John C. Crowell, Ph.D., UCLA; structural geology, tectonics.
Richard V. Fisher, Ph.D., Washington; physical stratigraphy, volcaniclastic sedimentation.
Michael D. Fuller, Ph.D., Cambridge; geomagnetism.
Clifford A. Hopson, Ph.D., Johns Hopkins; igneous and metamorphic petrology.
[4]*Robert M. Norris,* Ph.D., Scripps; geomorphology, marine geology.
George R. Tilton, Ph.D., Chicago; geochemistry, isotope geology (Chairman).
George Tunell, Ph.D., Harvard; economic geology. (*Emeritus,* recalled to active duty)
Donald W. Weaver, Ph.D., Berkeley; stratigraphic paleontology, engineering geology.
Robert W. Webb, Ph.D., Cal-Tech; mineralogy, geomorphology. (Emeritus, recalled to active duty)
William S. Wise, Ph.D., Stanford; mineralogy, geochemistry.
C. Douglas Woodhouse, LLM, Williams; mineralogy. *(Emeritus)*

Associate Professors

[3]*Arthur G. Sylvester,* Ph.D., UCLA; structural geology, petrofabrics.

Assistant Professors

James R. Boles, Ph.D., Otago; sedimentary petrology.
Bruce P. Luyendyk, Ph.D., Scripps; marine geophysics, paleomagnetism.
Keith B. Macdonald, Ph.D., Scripps; marine ecology, paleobiology, oceanography.

Lecturers

Stanley Awramik, Ph.D., Harvard; biogeology, paleontology.
James M. Mattinson, Ph.D., UCSB; petrology, isotope geology.

Research Associates

Thomas W. Dibblee, Jr., B.A., Stanford; geology.
Arne Junger, B.S., Berkeley; geophysics.
Edmond F. Lawrence, Ph.D., UC, Riverside; geology.
Parke D. Snavely, Jr., M.A., UCLA; geology.
Arthur N. Strahler, Ph.D., Columbia; geology and geography.
Bennie W. Troxel, M.A., UCLA; geology.

[3] Absent on Leave Spring 1976
[4] 1975-76

Concerns of the department

Geology is the science of the earth — the study of its rocks, minerals, records of ancient life, and of the physical, chemical, and biological processes, past and present, at work in the earth's interior, on its surface, and within its envelope of water and air. Its methods are applicable to studies of the moon and planets. From these arises a better understanding of our surroundings, as well as knowledge applicable to the solution of many of the pressing environmental problems now confronting humanity. The Department's program leading to the bachelor's degree provides the background in elementary geology, basic sciences, and mathematics necessary to undertake graduate work in geology or closely related fields such as geophysics, geochemistry, biogeology, or oceanography. While providing a basic foundation in geology, the program retains the flexibility to permit preparation for ultimate specialization in related fields. Thus, in close consultation with the undergraduate adviser, each student develops an individual program tailored to needs and interests.

Departmental Advising

An undergraduate adviser will advise majors and prospective majors and assist in their program planning. A graduate adviser, aided by a guidance committee, assists M.A. and Ph.D. candidates. Prospective students should consult the appropriate adviser before beginning their calendar of studies.

Bachelor of Arts

Preparation for the major

Minimal preparation shall include 30-32 semester hours or 45-48 quarter units of college-level work in biology, chemistry, mathematics, and physics, distributed among these fields as determined to be in the student's best interest in consultation with the Departmental Undergraduate Adviser. *In Biology:* students normally offer Biology/20 or Botany/20. Biology/1A—1B—1C is preferred for students interested in biogeology; *in Chemistry and Physics:* a year sequence in both chemistry and physics (with laboratories) appropriate to science majors; *in Mathematics:* at least two courses in the calculus (Mathematics/3B and 3C or equivalent), and additional mathematics, such as Mathematics/4A or Statistics, as appropriate to the student's interest. *In Geological Sciences:* Physical and Historical Geology (Geology/2 and 2L; 3 and 3L, or 195 with consent) and Mineralogy (Geology/25 and 26), or acceptable equivalents. Twenty units of foreign language or acceptable equivalents; Russian, or German, or French.

Upper Division major

The College of Letters and Science requires 60 Upper Division units for graduation. Of these, up to 48 units may be in the major and related fields. Geology/118B is normally required of all geology majors. Among the recommended additional geology courses for the major are 102A—B—C, 103, 104A, 110, 111, 112, or 122, 124, 135, and 195. For students preparing for graduate study in biogeology, geochemistry, or geophysics, an approved combination of physics, chemistry, mathematics, and biology will complete the major, so long as at least 24 Upper Division units in geology are included.

Graduate Programs

The Department awards the M.A. and Ph.D. degrees in Geology. A candidate for admission, in addition to fulfilling the general requirements of the Graduate Division, must present recent scores on the verbal and quantitative parts of the Graduate Record Examination and advanced part if applicable. Entering students will confer with the Graduate Adviser and a placement committee to determine a suitable program of study, based on each student's objectives and previous training. The Department encourages students with bachelor degrees in sciences other than geology to apply for admission. Normally, graduate students admitted will be expected to have satisfied the Department's foreign language requirement for the B.A. or an acceptable equivalent, or to complete the requirement after admission.

Master of Arts

Requirements

1. An integrated course of study recommended by a placement committee and the Graduate Adviser.
2. Demonstration of a scientific reading knowledge of any modern foreign language, or the satisfactory completion of a significant and related set of courses (eight units) supplementary to the student's program and normally from the sciences outside the department.
3. Preparation of a satisfactory thesis, (with 30 units of course work, at least 12 of which must be in graduate courses) or
4. Satisfactory completion of such examination as the student's guidance committee shall prescribe if the examination plan is followed (with 36 units of course work, at least 18 of which must be in graduate courses).

Doctor of Philosophy

Requirements

1. The student must demonstrate the following proficiencies by course work and by departmental qualifying examinations:
    a. Superior competence in the field of specialization.
    b. Broad knowledge in the geological sciences, particularly those aspects that relate to the specialization.
    c. Satisfactory knowledge of sciences other than geology which are germane to the fields of interest.
2. The student must demonstrate, by examination or course work, either:
    a. An excellent reading knowledge of one foreign language, generally French, German, or Russian, or an adequate reading knowledge of two languages other than English, or
    b. Competence in a science, mathematics, or in a field of study usually related to but not part of the area of specialization, and normally outside the Department of Geological Sciences.
3. On completion of requirements 1 and 2 above, the candidate pursues a plan of research leading to the doctoral dissertation. Before being formally admitted to candidacy for the doctorate, a comprehensive oral examination administered by the dissertation committee must be passed.
4. The dissertation, prepared in a form suitable for professional publication, must be approved by the committee, and the candidate is required to present its principal conclusions in open forum.
5. Completion of the doctorate must be accomplished within five years after the comprehensive oral examination is passed.
6. Ordinarily a candidate is required to serve as a Teaching Assistant for a minimum of three quarters.

Career opportunities

There are numerous career opportunities in the geological sciences. Students interested in further information should talk with the Undergraduate Adviser in the Department.

Teaching credentials

Students who complete a major in geology may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter in the year in which the advanced degree will be completed.

Correspondence information

Department of Geological Sciences, University of California, Santa Barbara, California 93106. Phone (805) 961-3471.

Geological Sciences

Lower Division courses

2 • General Geology: Physical (4) Staff
Lecture, three hours. An introduction to the science of the earth; properties and processes of the earth's interior and crust and their interaction with surface processes which modify and shape man's physical environment.

2L • Laboratory, General Geology: Physical (1) Staff
Should be taken concurrently but may follow Geology/2. Laboratory, three hours. Identification of common minerals and rocks. Introduction to topographic and geologic maps, land forms, and geologic structures. Field trips.

2XL • Physical Geology: Independent Project Laboratory (2) Staff
May be taken concurrently with or following Geology/2. (Not ordinarily open to students who have received credit for Geology/2L.) Laboratory, three hours; discussion, one hour; field trip. Individual field, laboratory, or library research project resulting in term paper, under guidance of instructor as necessary. Field trips and preparatory material equivalent to much of that presented in Geology/2L.

3 • General Geology: Historical (3) Norris
Prerequisite: Geology/2. Lecture, three hours. Antiquity and history of the earth, its physical changes, and the record of biological evolution.

3L • Laboratory, General Geology: Historical (1) Staff
Should be taken concurrently but may follow Geology/3. Laboratory, three hours. Elementary problems in paleontology and stratigraphy.

4 • Introduction to Oceanography (4) Macdonald
Lecture, three hours; discussion, one hour. A broad introduction to oceanography covering the major physical, chemical, biological, and geological features of the oceans, their role in earth history, and potential use as a natural resource.

18 • Field Studies in Geological Science (1) Staff
Prerequisite: Geology/2 or its equivalent (may be taken concurrently) or consent of instructor. Four and one-half day field trip, Fall or Spring Quarter. Field studies under guidance of two or three staff members introducing the geology of California. Four trips offered in sequence: Fall: Imperial and Colorado Deserts **or** Eastern Mojave Basin; Spring: Death Valley **or** Saline Valley-Inyo-White Mtns., Mono Lake.

25 • Crystallography and Crystal Chemistry (4) Wise
Prerequisites: Chemistry/1A and Math/3A (may be taken concurrently). Lecture, three hours; laboratory, three hours. Introduction to symmetry operations, internal symmetry and crystal structures, crystal chemistry, external crystallography, physical properties, and x-ray crystallography.

26 • Minerals (5) Wise
Prerequisite: Geology/25. Lecture, three hours; laboratory, six hours. Properties, origins, associations, and determination of the more important ore and rock-forming minerals.

98 • Readings in Geological Sciences (1-3) Staff
Prerequisite: Honors in geological sciences at Lower Divsion level, as determined by faculty sponsor and chairman of department. Critical reviews and discussions of selected geological subjects. May be taken more than once.

Upper Division courses

100A • Frontiers of Earth Science (4) Luyendyk, Mattinson
Lecture, three hours; discussion, one hour. Introduction to earth and planetary science, with emphasis on the origin and composition of the earth, moon, and planets, and the origin of life. Additional topics will include sea floor spreading and continental drift, earthquake seismology, and geochronology. Principally for non-majors.

101 • Principles of Geology (4) Staff
(Not open to students who have taken Geology/2). Lecture, three hours; laboratory, one hour; field trips. Geological principles and processes. Forces at work within the earth and upon its surface that change the physical and biological environments. Geologic time and the inevitability of change. Principally for non-majors.

102A • Petrology of Igneous Rocks (3) Hopson
Prerequisite: Geology/26, 104A. Lecture, two hours. The occurrence, associations, tectonics, and petrogenesis of the common plutonic and volcanic rocks. Introduction to physical chemistry of magma systems; magmatic crystallization and differentiation. Pluton emplacement; volcanic eruption mechanisms. Extensive reading is required.

102AL • Petrography of Igneous Rocks (3) Hopson
Prerequisite: Geology/102A, 110. 102A normally taken concurrently. Seminar, one hour; laboratory, six hours. Identification, classification, and interpretation of igneous rocks, using the petrographic microscope and hand lens.

102B • Sedimentary Petrology (5) Boles
Prerequisites: Geology/26 and 104A (which may be taken concurrently). Lecture, two hours; laboratory, six hours; field trips. Origin, interpretation and identification of sedimentary rocks.

102C • Petrology of Metomorphic Rocks. (3) Hopson
Prerequisites: Geology/102A or 102B. Lecture, two hours. Introduction to the occurrence and petrogenesis of metamorphic rocks. Protoliths of metamorphic rocks; petrofabrics; metamorphic differentiation; metamorphic facies and facies series; granitization. Types of metamorphism and the tectonic setting. Extensive reading required.

102CL • Petrography of Metomorphic Rocks (3) Hopson
Prerequisites: 102C, 110; 102C normally taken concurrently. Seminar, one hour; laboratory, six hours. Identification, classification, and interpretation of metamorphic rocks, using the petrographic microscope and hand lens.

103 • Fundamentals of Structural Geology (3) Crowell
Prerequisite: Geology/102B. Lecture, three hours; field trips. Studies of deformed rocks, folding and faulting, and tectonics of the earth, particularly the crust.

103L • Laboratory, Structural Geology (2) Crowell
Geology/103 to be taken concurrently. Laboratory, four hours; field trips. Descriptive geometry applied to geologic problems, use of stereonet, structure contouring and isopaching, map interpretation, exercises in structural analysis and synthesis.

104A • Field Studies in Geologic Methods (5) Sylvester and Staff
Prerequisites: Geology/2 and 2L or 101 and 3, 3L (or 195). Lecture, one hour; laboratory, three hours; field, eight hours. Introduction to the methods of geological observation and interpretation, with an emphasis on understanding earth processes in the field and reconstructing the physical history of the earth; the stratigraphic, petrologic, and structural relations of rocks; methods used in solving problems of the geological environment. Restricted to majors.

104B • Field Methods (5) Norris
Prerequisites: Geology/102B and 103. Field and laboratory, thirteen hours. Geologic mapping on topographic maps and aerial photographs; use of geologic field instruments; field techniques; preparation of geologic maps and reports.

105 • Marine Geology (4) (alt. years) Staff
Prerequisite: Geology/3, or 101, or consent of the instructor. Lecture, three hours; field trips. Geologic processes in the sea; rocks and sediments of the sea bottom and the shoreline.

106 • Geological Problems of the Human Environment (4) Sylvester
Prerequisite: Geology/2, 101 or equivalent, or consent of instructor. Lecture, three hours; field trips. Problems concerning earthquakes, mineral and energy resources, construction projects (dams, highways, tunnels, etc.) floods, beach erosion, etc. Principles of sound planning for the human use of the solid earth. (This course is the same as Environmental Studies/106).

109 • Geology of California (4) (alt. years) Norris
Prerequisite: Geology/3, or 101, or consent of the instructor. Lecture, three hours; field trips.

110 • Optical Mineralogy (5) Mattinson
Prerequisite: Geology/25. Lecture, three hours; laboratory, six hours. Principles and methods of optical crystallography and optical mineralogy.

111 • Concepts of Paleonology (4) Macdonald
Prerequisites: Biology/20, or equivalent, and/or consent of instructor. Lecture, two hours; laboratory, six hours. An introduction to the principles of taxonomy, evolution, and paleontology as exemplified by fossils: Demonstration of these principles through laboratory and field studies.

112 • Stratigraphic Paleontology (4) (alt. years) Weaver
Prerequisites: Geology/104A, 111, or consent of instructor. Lecture, two hours; laboratory, three hours; field trips. Principles of stratigraphic paleontology and the stratigraphic distribution of fossils.

113 • Engineering Geology (3) Weaver
Prerequisites: Senior standing and consent of instructor. Lecture, one hour; laboratory, six hours. Application of the principles of geology to civil engineering problems in dam construction, landslides, ground water, building sites, building materials, marine shorelines, petroleum industry, military operations. Course will involve discussion, laboratory, and field problems.

115 • History of the Geological Sciences (4) On demand. Norris
Prerequisite: Geology/2. Lecture, three hours; discussion, one hour. Historical development and philosophy of the geological sciences with emphasis on the important early workers in the science.

117 • Geomorphology (4) (alt. years). Norris
Prerequisite: Geology/3, or 101, or consent of instructor. Lecture, three hours; field. Evolution of the landscape and relief features of the earth.

118A • Summer Studies, Field Methods (3) Staff
Prerequisites: Geology/102A or 102B, 103, 104A. Two weeks in field, immediately following Spring Quarter. Use of geologic field instruments, field techniques, geological mapping on topographic maps or aerial photographs. For those students entering 118B who have not taken 104B.

118B • Summer Field Geology (12) Staff
Prerequisite: Geology/102A or 102B, 103, 104A, and 104B or 118A. Eight weeks in the field during the summer. Preparation of a geologic map, geologic sections, and a report on a selected region.

119 • Field Investigations in Geology (5-9) Staff
Prerequisites: Geology 104A and/or consent of instructor. Selected field areas are investigated as research problems. Content varies from year to year. (May be taken in lieu of Geology 118, with approval of the Department.)

122 • Physical Stratigraphy (5) (alt. years) Fisher
Prerequisite: Geology/102B or consent of instructor. Lecture, two hours; laboratory, six hours; and field trips. Principles and processes involved in the development and description of stratified rock accumulations.

124 • Geochemistry I (4) Tilton, Wise
Prerequisites: Chemistry/1C, Mathematics/3C, and any of Geology/2, 100A, or 101. Lecture, three hours; discussion, one hour. Distribution and geochemical classification of the elements. Crystal chemistry. Solubility and chemical equilibrium in solutions. Phase diagrams, crystallization of magmas and metamorphic reactions.

125 • Geochemistry II (4) Tilton
Prerequisite: Mathematics/3C. Lecture, four hours. Origin, age, and abundance of elements. Evolution of meteorites, the moon, and the earth. Radiometric dating.

126 • Experimental Methods in Geochemistry (3) Tilton
Prerequisite: Geology/125. Lecture, two hours; laboratory, three hours. Use of experimental techniques, including counting of alpha, beta, and gamma radiations applied to problems of geochemical interest.

127 • X-Ray Crystallography (3) On demand. Wise
Prerequisite: Geology/110, or consent of the instructor. Lecture, two hours; laboratory, three hours. Single-crystal x-ray diffraction techniques in the study of internal symmetry, space groups, and structure.

128 • Advanced Techniques in Mineralogy (4) On demand. Wise
Prerequisite: Geology/110. Lecture, two hours; laboratory, six hours. Theory and practice of advanced techniques and methods in mineralogy: the universal stage microscopy, ore microscopy, and x-ray diffraction.

133 • Geologic Data Analysis (3) On demand. Macdonald
Lecture, three hours. Quantitative data analysis and simple statistics applied to geologic problems. Class stresses nonparametric methods, covers selection of methods appropriate to particular problems, their efficient computation and interpretation.

135 • Geophysics (Gravity and Geomagnetism) (4) Fuller, Luyendyk

Prerequisite: introductory college level calculus, physics, and geology. Lecture, four hours. The earth's gravity and magnetic fields, gravity and magnetic anomalies and their implications in oil and mineral exploration and plate tectonics.

136 • Geophysics (Seismology and Heat Flow) (4) Luyendyk
Prerequisite: Introductory college level calculus, physics, and geology. Lecture, four hours. Earthquakes and earth's interior, seismic reflection and refraction; surface heat flow and sources of heat; implications to plate tectonics and earth history.

145 • Resources and Man (4) On demand. Staff
Prerequisite: Consent of instructor. Discussion, three hours. Considers interactions between man and his resources with emphasis on questions of resource adequacy and environmental quality.

160A—B—C • Seminar in Geology (1,1,1) Staff
Prerequisite: Junior major in Geology or consent of chairman. May be repeated for credit. Attendance at departmental "Journal Club" (Geology/260, Seminar in Geology) and brief written evaluations of the three papers which, in the student's judgment, were the best of the quarter.

190 • Advanced Studies in Paleontology (1-4) On demand. Macdonald
Prerequisites: Geology/111 and consent of instructor. Laboratory, three to twelve hours. Designed to meet the interests and needs of individual students. Selected readings and laboratory work in systematic paleontology; field studies of recent or fossil biotas; animal-substrate relations, biostatistics, etc. Term paper required.

194 • Group Studies for Advanced Students (1-5) Staff
Prerequisites: Upper Division standing; consent of the instructor and the department chairman. Intensive research or study by a small group of advanced students who share an interest in a topic not included in the regular departmental curriculum. Students may repeat the course; no more than five units will apply to the major.

195 • Adventures in Earth History (5) Staff
Prerequisite: Consent of instructor. Discussion and lecture, four hours. Current and classic problems in the history of the earth from its origin to the present. Designed to integrate and extend the historical aspects of the undergraduate program for science majors and beginning graduate students.

***198 • Readings in the Geological Sciences** (2-4) Staff
Prerequisites: Consent of the instructor and the chairman. Critical reviews and discussions of selected geological subjects. May be taken more than once at the option of the student; not more than four units may be included in the minimum requirements for the major.

***199 • Independent Studies in Geology** (1-5) Staff
Prerequisite: senior standing with a 3.0 grade-point average within the major, or by special permission. Petition required. Selected research under the direction of a faculty member. 199 Courses are limited to no more than five units in one quarter and no more than 12 units total.

Graduate courses

201A • Graduate Field Seminar (3) Staff
Required of entering graduate students. Three field problems, each followed by a written report.

201B • Graduate Field Seminar (3) Staff
Required of all graduate students in the academic year in which 201A is completed. Three field problems, each followed by a written report.

204 • Geology of Fluids and Flow (3) (alt. years) Fisher
Prerequisite: Consent of instructor. Lecture, three hours. Characteristics of fluids — air, water, gases, lava, magma. Dispersal mechanisms of wind, stream, mud flow, turbidity current, pyroclastic flow and lava flow. Fluidization and diatremes. Flowage differentiation and crystal settling in silicate fluids.

206 • Volcaniclastic Rocks and Sediments (3) (alt. years) Fisher
Prerequisite: Consent of instructor. Lecture, one hour; laboratory, six hours. Genesis and description of volcaniclastic rocks — pyroclastic, hyaloclastic and epiclastic. Dispersal and depositional mechanisms, including subaerial and submarine varieties.

210 • Paleoecology: Principles and Approaches (4) (Alt. years) Macdonald
Prerequisite: Consent of instructor. Discussion, three hours. Application of paleontologic, sedimentologic, and geochemical approaches to the interpretation of ancient environments and the solution of paleobiological problems. Laboratory, field, or library research leading to a term paper.

212 • Seminar In Stratigraphy and Paleontology (2) Weaver
Prerequisites: Geology/III, 112. Discussion, two hours. A review and discussion of selected current and classic works in the field of stratigraphy and paleontology.

214 • Seminar: Problems In Marine Science (4) (Alt. years) Macdonald
Prerequisite: Consent of instructor. Discussion, three hours. A critical review of research on selected topics in marine science. Subject matter will change from year to year; typical themes will include: (1) estuaries and coastal lagoons; (2) coral reefs past and present; (3) continental shelves; (4) recent sedimentary environments; (5) oceanography of shallow seas.

218 • Micropaleontology (4) Weaver
Prerequisites: Geology/111, 112 or consent of instructor. Lecture, two hours; laboratory, six hours.

220 • Biogeology (4) Staff
Prerequisite: Consent of instructior. Students with biological, geological, and chemical backgrounds encouraged. Lecture, one to three hours; laboratory, zero to four hours, as appropriate to course content. Selected subjects related to the evolution of the primitive earth and to environmental and paleomicrobiological processes and events in geology.

221 • Seminar in Petrofabrics (4) (Alt. years) Sylvester
Prerequisite: Geology/103 and 110, or consent of instructor. Lecture, two hours; laboratory, six hours. Consideration of theoretical, experimental, and empirical aspects of microscopic analysis of metamorphic tectonites.

223 • Seminar in Petrology (4) (Alt. years) Hopson
Prerequisites: 102A, 102C. Discussion, three hours. Selected topics in igneous and metamorphic petrology.

225 • Advanced Igneous Petrology (4) (Alt. years) Hopson
Prerequisite: Geology/102A. Lecture, two hours; laboratory, six hours. The study of igneous rocks and their origins, with emphasis on their petrography, physical chemistry, and field relations.

226 • Thermodynamics and Petrologic Applications (4) (Alt. years) Wise
Prerequisite: A course in physical chemistry. Lecture, three hours; laboratory, one hour. Derivation of first, second, and third laws thermodynamics. Application of free energy, entropy, and heat capacity calculations to petrologic problems.

227 • Mineral Paragenesis (2) (Alt. years) Wise
Prerequisite: Geology/128, or consent of instructor. Lecture, two hours. Application of mineral data, such as composition and structural state, to rock origins.

227L • Laboratory, Mineral Paragenesis (2) (Alt. years) Wise
Geology/227 to be taken concurrently. Laboratory, six hours. Practical application of mineral data, such as composition and structural state, to rock origins.

228 • Isotope Geology (3) (Alt. years) Tilton
Prerequisite: Geology/125. Lecture, three hours. Methods of age determination including dating of igneous rocks and sediments. Interpretation of discordant lead ages. Use of lead and strontium as natural tracers. Light stable isotopes, with emphasis on oxygen.

229 • Analytical Techniques In Mineralogy (3-4) On demand. Wise
Prerequisite: Permission of instructor. Course content variable, but may cover electron probe microanalysis, x-ray spectrographic analysis, atomic absorption spectrometry or classical chemical analytical methods. May be repeated for credit.

230 • Field Studies In Tectonics (4) (Alt. years) Crowell
Prerequisite: Geology/201A or consent of instructor. Seminar, discussion, and field trips. Advanced seminar on a local tectonic problem.

231 • Structural Analysis of Deformed Rocks (3) On demand. Sylvester
Prerequisite: Geology/103 or equivalent. Seminar, three hours, and field trips. Review of selected classical and current works dealing with geometrical and statistical analysis of tectonites on the microscopic and megascopic scales. Computer analysis of field measurement data.

235 • Plate Tectonics (3) Luyendyk
Prerequisite: Geology/135 or 136; Geology/4 or 105 recommended. Lecture and discussion, three hours. Plate tectonics principles from a geometrical standpoint. Discussions will center around history of the ocean basins and plate movements.

247 • Seminar in Quaternary Geology (3) On demand. Norris
Prerequisite: Geology/117 or consent of instructor. Discussion, three hours.

249 • Seminar In Structure and Tectonics (4) (Alt. years). Crowell
Prerequisite: Geology/201A or consent of instructor. Discussion, three hours; field trips. Topical structural geology and tectonics.

250 • Contemporary Issues in Earth and Planetary History (2-6) On demand Staff
Prerequisites: A year of graduate work and consent of instructor. Discussion, one to five hours, as appropriate to content. Seminar discussion of topics to be selected for their timeliness and interest to students.

260 • Seminar in Geology (1) Staff
Required of all graduate students. Two hours per week. Presentation and discussion of current research, and reviews of the literature on selected geologic concepts. Students will

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*See L-2 for 198/199 independent study unit limitations.

GEOLOGY—(SEE GEOLOGICAL SCIENCES) GERMAN—(SEE GERMANIC & SLAVIC LANGUAGES & LITERATURES)

present material reflecting their interests in geology for critical appraisal, of both content and manner of presentation, by selected members of the seminar. Emphasis will be placed on assisting students in developing professional speaking style. May be repeated for credit.

270 • Seminar in Geologic Problems (1-3) Staff
Prerequisite: Graduate standing. Discussion, three to nine hours. Review and discussion of a current problem in geology. Content is variable and depends on student interest.

280 • Seminar in Field Geology (0-4) Staff
Field trips of one day or more, organized as opportune. Appropriate report required for each trip. Credit is one-half unit per day in the field, with a maximum of one unit for any trip. May be repeated for a maximum of eight units each academic year. S/U grading.

596 • Directed Reading and Research (2-6) Staff
Prerequisites: Consent of instructor and graduate adviser. Individual tutorial. Written proposal for each tutorial must be approved by the instructor and the department chairman, and filed with the Graduate Division. No more than half the units necessary for the master's degree may be taken in 596.

597 • Individual Study for Ph.D. Examinations (1-12) Staff
Prerequisites: Consent of instructor and graduate adviser. Instructor should be student's major professor or chairman of his committee. No unit credit allowed toward advanced degree.

598 • Master's Thesis Research and Preparation (1-6) Staff
Prerequisites: Consent of the instructor and graduate adviser. Instructor should be chairman of the student's thesis committee. Maximum of 12 units total. No unit credit allowed toward master's degree.

599 • Ph.D., Dissertation Preparation (1-6) Staff
Prerequisites: Consent of instructor and graduate adviser. Maximum of 12 units total. Limited to terminal preparation. Instructor should be chairman of the student's doctoral committee.

Germanic and Slavic languages and literatures

Professors

Stuart Atkins, Ph.D., Yale; classical German literature.
[1]*Richard C. Exner,* Ph.D., USC; 19th Century German literature, lyric poetry, essay, prose, comparative literature, Stifter, Hofmannsthal, Thomas Mann, tragedy.
Rolf N. Linn, Ph.D., UCLA; 18th, 19th and 20th century literature, Heinrich Mann, Friedrich Schiller.
Harry Steinhauer, Ph.D., University of Toronto *(Emeritus).*
John T. Waterman, Ph.D., UCLA; German philology and linguistics, Gothic, Old High German (Chairman).

Associate Professors

Gunther H. Gottschalk, Ph.D., USC; Hermann Hesse, general philology.
Gerhart Hoffmeister, Ph.D., University of Maryland; German Renaissance and Baroque literature, comparative literature.
[2]*Donald B. Johnson,* Ph.D., UCLA; Russian linguistics, structural literary criticism, Nabokov.
Albert Kaspin, Ph.D. Berkeley; 19th century Russian prose writers, Russian drama.
Ursula R. Mahlendorf, Ph.D., Brown; contemporary German literature, expressionism, literature after 1945.

Assistant Professors

Torborg L. Lundell, Ph.D., Berkeley; contemporary Swedish literature, Swedish film, Swedish language.
L. Carl Moody, Ph.D., Ohio State; Soviet literature.

Lecturers

Clifford A. Barraclough, M.A., Washington; German language and pedagogy.
William F. Holtrop, Ed.D., UCLA *(Emeritus).*
Roselinde Konrad; German structure and stylistics, translation and interpretation.
Mstislav W. Kostruba, M.A., UCSB; Russian and Serbo-Croatian languages.

Concerns of the department

The curriculum for the major in either German or Russian is designed to provide a survey of the literature from its beginnings to the present. Each major also studies the historical development of the language and is exposed to the modern language in almost all upper division classes. An appropriate linguistic background for the major is gained in lower division courses.

The 40-unit requirement for the major assures the student an adequate and well-rounded background in both language and literature. Within the field of literature, the department is especially strong in modern and contemporary German literature, offering a number of

[1] Winter and Spring 1976 In Residence
[2] On leave 1975-76

courses dealing with the works of Nobel Prize winners Thomas Mann, Hermann Hesse, and Heinrich Boll. Hugo von Hofmannsthal, Heinrich Mann, Bertolt Brecht, and Gunter Grass are also well represented. In Russian, the works of another Nobel Prize laureate, Alexander Solzhenitsyn, and Vladimir Nabokov are given special prominence. In both German and Russian, of course, the great authors of the 18th and 19th centuries continue to be studied extensively.

Degrees

In German there are programs of study leading to the B.A., M.A. and Ph.D. degrees. Also there is a one-year post-graduate program leading to certification as a translator-interpreter. In Russian there is a B.A. program. A relatively small staff teaching classes of ten to twenty students at the upper division and graduate levels assures a maximum degree of personal contact between student and instructor. We have a high number of distinguished scholars of international reputation, most of them authors of authoritative books in their area of specialization.

Students majoring in German may spend their junior year at our Education Abroad Center at Goettingen. Russian majors may compete for a chance to spend a semester at Leningrad University.

Bachelor of Arts—Germanic languages and literatures

Preparation for the Major

Courses 1,2,3,4,5, or four years of high school German subject to validation by passing the departmental test given at the beginning of each quarter, and course 6, or German 14, or other equivalent to be tested by examination. All German majors must take German 32 and History/4A—B. Philosophy/20A—B—C is strongly recommended.

Students who wish to make German their major subject must have maintained an average grade of at least C in the college courses in German taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Upper Division Major

The German major consists of forty upper division units. These must include German/101A—B (or 110A—B for native speakers), 120 and 115A—B—C, or equivalents. (An "equivalent" course — other than a survey course taken elsewhere — is any one of the literature courses that covers approximately the same material as any one quarter of the survey course.) The remaining sixteen units should be divided among upper division courses. An undergraduate major in German may enroll for credit in one quarter of any German literature-in-translation course.

Native speakers of German should substitute German/110A—B for German/101A—B. The major in German who goes to Goettingen under the EAP program is expected to do 12 units beyond the required course 101A—B (GC/106A—B—C) of the forty required for the major on this campus, either before or after the year abroad.* Majors are encouraged to take German/120 at UCSB, since it is not offered at Goettingen. All Goettingen Center literature courses are acceptable for the major in German, including GC/**134** • German Folklore.

There is a basic limit on the amount of unit credit for language courses. This is sixteen, the unit value of language courses offered at UCSB. Hence, a student may take our 16-unit language courses (101A—B and 110A—B) and then receive no credit for the language portion (12 units) of the required intensive program at the Goettingen study center. A student may have taken 101A—B for eight units; the student would then receive eight more units at Goettingen for the language portion of the intensive course and could thus fulfill the requirement of language courses for the UCSB major.

Bachelor of Arts—Slavic languages and literatures

Preparation for the major

Courses 1,2,3,4,5, or four years of high school Russian subject to validation by passing the departmental test given at the beginning of each quarter, and course 6, or other equivalent to be tested by examination. A student may enroll in upper division courses after he has passed Russian/6 with grade B or better.

Students who wish to make Russian their major subject must have maintained an average grade of at least C in the college courses in Russian taken prior to their junior year. Students transferring from other institutions may be tested by examinations.

Russian/8A—B—C is strongly recommended, as well as Russian/32.

Upper Division major

The Russian major consists of forty Upper Division units. Russian/101A—B—C and 108A—B are required. A minimum of eight units must be selected from: Russian/102, 103, 105, 121, 122, 123.

In the literature-in-translation courses Russian majors will be required to read a significant portion of the material in the original.

Russian majors are urged to take History/135A—B—C.

UCSB participates in a national program through which sixty students a year spend a semester studying at Leningrad University in the USSR. Outstanding students have a good chance of selection. Financial assistance is available. The major in Russian who spends a semester studying in the Soviet Union is expected to do 12 units beyond the required course 101A—B—C of the forty required for the major on this campus, either before or after the stay abroad.*

The translator-interpreter program

In addition to the general requirements of the Graduate Division, the following departmental requirements apply:

1. A bachelor's degree with a major in German and at least 24 upper division units in another approved field (normally a combination of courses in history and the social sciences); *or* a B.A. with a major **other** than in German and at least 24 upper division units of course work in German (additional courses in history and the social sciences may at times be required).
2. An academic year's study as a regular student at a recognized university in a country in which German is the national language (including German-speaking Switzerland). This prerequisite is normally absolved by participation in UC's Education Abroad Program.
3. Achieving a satisfactory score on the Advanced German Test of the Graduate Record Examination (Educational Testing Service).

This is a one-year, post-baccalaureate course of study to prepare the student for qualification as a certified translator-interpreter of German. Although administered through the Graduate Division, the program is professionally oriented and practical in nature. It is not part of our graduate program as such (M.A., Ph.D.), nor may the credits earned in the Program be applied towards an advanced academic degree in German literature. The goal is to prepare the student for the final qualifying examinations which must be passed in order to earn the University Certificate in Translating and Interpreting. The Translator-Interpreter Program enjoys the same status as any other Certificate Program offered by the University of California; that is, the University attests by a diploma to the professional competence of our certificate-holders. Most of the courses will be taught by individualized instruction, thus allowing the student to advance according to ability and personal motivation. An average of thirty units of course work will be required by way of preparation for the certifying examinations. All courses are graded on the basis of "Satisfactory-Unsatisfactory."

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*See also the senior residence requirement

Prospective graduate students who are also interested in earning a Translator-Interpreter Certificate, and who can meet the admission requirements, should plan on spending an extra year of *full-time* study preparing for the examinations upon which certification depends.

Master of Arts — Germanic Languages and Literatures

In addition to the general requirements of the Graduate Division, the following departmental requirements apply:

1. All applicants for admission to our graduate program must take the Advanced German Test administered by the Educational Testing Service. The location of testing centers and dates when this test is offered may be determined by writing to Graduate Record Examinations, Educational Testing Service, Box 955, Princeton, New Jersey 08540. Results of the test must be available to us before a student's application can be considered complete.

2. The student must have an undergraduate major in German or its equivalent. Candidates who are deficient in this respect will take the necessary undergraduate courses to make up the deficiency before or concurrent with beginning work in the master's program.

3. The Department offers the M.A. degree under Plan II (without thesis) only. Candidates for the M.A. may prepare themselves for one of two types of qualifying examination (all other requirements are the same for all candidates):

Type A, primarily designed for those who plan to go directly into teaching at the high school or junior college level, consists of one three-hour written examination intended to test the candidate's command of factual information. The candidate is also required to prepare and deliver two oral presentations: a) an analysis appropriate to a high school class of a literary selection: b) an analysis appropriate to a high school class of a feature of language structure. The candidate is given 48 hours in which to prepare the oral presentations, each one of which is to be no less than 30 minutes and no longer than one hour in length.

Type B is designed for those students who plan to go on for the doctorate. The student may not take more than 12 units of undergraduate work. The four-hour written examination is primarily intended to demonstrate the student's ability to interpret literature in a professional manner. The student should also be able to exhibit a reasonably good command of research methods and procedures. This examination may be followed by a one-hour oral examination.

A graduate student who decides to work toward the doctorate after earning the M.A. degree by fulfilling the Type A requirements will be obliged to take again the Advanced German Test administered by the Educational Testing Service and to achieve a score satisfactory to the department.

4. To satisfy the foreign language requirement for the M.A. the student must complete, after admission to the Graduate Division, one upper division literature course (in which the readings are substantially in the foreign language) with a grade of B or better, or take a departmental examination, consisting of a passage in the target language of approximately 40 lines, which bear upon material known to have been covered in courses of instruction, to be translated in writing within one and a half hours, using a dictionary.

Courses taken to fulfill a foreign language requirement, or taken in preparation for absolving a foreign language requirement, will not be counted as part of a graduate student's academic course load.

5. One four-unit course in another department may, with the approval of the Graduate Adviser, be counted toward the degree if it has relevance to the student's special program.

6. The course in bibliography and methods of criticism must be taken by all students. It is a prerequisite for admission to a seminar in German.

7. The course in the history of the German language (German/220A—B) must be taken by all students.

8. Students who have had no Middle High German are strongly advised to take German/121, a prerequisite for graduate work in this field.

9. Every student must teach a minimum of two classes in elementary German under supervision at some time before taking the M.A. degree.

Doctor of Philosophy — Germanic Languages and Literatures

In addition to the general requirements of the Graduate Division, the applicant must satisfy the following departmental requirement:

1. All applicants for admission to our graduate program must take the Advanced German Test administered by the Educational Testing Service. The location of testing centers and dates when this test is offered may be determined by writing to Graduate Record Examinations, Educational Testing Service, Box 955, Princeton, New Jersey 08540. Results of the test must be available to us before a student's application can be considered complete.

2. The student will follow a course of study leading to the M.A. degree but may not take more than 12 units of undergraduate work.

3. To satisfy the foreign language requirement for the Ph.D. the student must complete, after admission to the Graduate Division, one Upper Division literature course (in which the readings are substantially in the foreign language) with a grade of B or better, or take a departmental examination, consisting of a passage in the target language of approximately 40 lines, which bear upon the candidate's major research interest, to be translated in writing within one and a half hours, using a dictionary. The student may substitute for the second foreign language a departmental examination based upon a reading list of world classics or complete course 3 of the regular sequence of a second foreign language with a grade of B or better, or place into course 4 on the language placement examination.

Courses taken to fulfill a foreign language requirement, or taken in preparation for absolving the foreign language requirement, will not be counted as part of a graduate student's academic course load.

4. After the satisfactory completion of the M.A. equivalent, the student will be advised from quarter to quarter which courses, in the adviser's opinion, are necessary in order for the student to be properly prepared for the doctoral qualifying examinations.

5. The qualifying examination, which admits the student to candidacy, will consist of three written examinations, followed by an oral examination. The candidate will write: a) one four-hour examination on German philology and older German literature (from the beginnings to 1624), including the history of the German language and a substantive knowledge of either Gothic or Old High German; b) two four-hour examinations on major works and movements in German literature after 1624. The examination in German philology and older literature (a) will be scheduled at least one month prior to the two examinations dealing with post-1624 literature (b).

6. Upon passing the qualifying examination, the student will be advanced to candidacy. A dissertation then must be written and defended in an oral examination.

7. Every student must teach a minimum of three classes in elementary or intermediate German under supervision at some time before taking the Ph.D. degree.

Career Opportunities

An undergraduate major in languages and literatures is not primarily intended to provide a student with a vocation. It is an education. However, there are many areas in the fields of commerce, industry, government, journalism, and the arts where a knowledge of a second language is extremely useful. Those who are interested in a vocation in foreign languages should consider a career in teaching or in translating and interpreting. The latter area is also an appropriate background for many other careers in the business world.

Teaching Credentials

Students who complete a major in German or Russian may be eligible for pursuing a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education-Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Contact the designated adviser in German or Russian for specific requirements. Proficiency in language fluency must be demonstrated before student teaching begins.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter in the year in which the advanced degree will be completed.

Correspondence information

Department of Germanic and Slavic Languages, Phelps Hall, Rm. 6206, University of California, Santa Barbara, California 93106
Phone: (805) 961-2131.

German

Lower Division courses

Students wishing to study German may now choose between **German/1,2,3,4,5,6** and **German/14.** In the **Series 1 thru 6** all students progress at the same rate and cover the same amount of material. At the end of each quarter all students who pass receive four units of credit. Mastery of each instructional unit is encouraged but not required before proceeding to the next. The final grades for the quarter cover the traditional range of A thru F. Class and laboratory attendance are required. The instructor is primarily responsible for directing student learning. Tests are given during regular classes at fixed times.In **German/14** each student progresses individually and covers differing amounts of material. In class the student receives suggested study procedures and individual guidance. Attendance in class and the laboratory is optional. Several testinghours are scheduled weekly. At the end of the quarter each student receives the units of credit earned (from a *required* minimum of one to a theoretical maximum of 24.) Mastery of each instructional unit is required before proceeding to the next. The final grade for the quarter will normally be A or B.

Students who began German in high school and who wish to continue with the study of German are advised to take the German placement examination administered by the department to determine the proper placement.

The Department reserves the right to place students in courses from which they can best profit. Those who possess a native command of a foreign language will not be permitted to enroll in Lower Division courses of that language.

Anyone who has received a D grade in elementary language courses (1-5) is strongly advised not to proceed to the next course. The course should either be repeated for no credit and at least a C grade earned or a tutor engaged to prepare for the next course.

A student who has completed a more advanced course in a sequential series, e.g. German or Russian/1,2,3,4,5, 6 will not be permitted to enroll in a course that is lower in the series. Two courses of a sequential series may not be taken concurrently.

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1 • Elementary German (4) Staff

1G • Reading Course for Graduate Students (0) Staff
Essentials of German grammar and reading of simple texts in preparation for graduate language examination.

2 • Elementary German (4) Staff
Continuation of 1.

2G • Reading Course for Graduate Students (0) Staff
Continuation of 1G. Grammar review; reading of intermediate texts; individual help with specialized readings in student's field of study. The purpose of the course is to prepare students for the graduate language examination.

3 • Elementary German (4) Staff
Continuation of 2.

4 • Intermediate German (4) Staff
Continuation of 3.

5 • Intermediate German (4) Staff
Continuation of 4.

6 • Introduction to the Study of Literature (4) Staff
Highly recommended for those whose major interest is in literature. Interpretation of basic texts of the major genres. Those students who are primarily interested in language should enroll for the last four units of German/14.

8A—B—C • German Conversation (2,2,2) Staff
Prerequisite: German/3 or equivalent prerequisite to A, German/4 or 8A prerequisite to B, German/5 or 8B pre-

requisite to C. Conversation course conducted entirely in German. Meets two hours per week.

14 • Individualized Instruction (1-24) Staff
Equivalent to elementary and intermediate courses 1-6. Course consists of 24 sequential instructional units. Successful completion of each unit earns the student one unit of credit and permits him to continue, if he so wishes to the following unit. Each student progresses at his own rate of speed. Units of credit and grades are calculated on the basis of instruction units completed. *At least one unit must be completed ten days before the end of classes or a grade of F for one unit will be recorded.*

32 • Germany Today (4) Exner, Hoffmeister, Mahlendorf
What is German? People, attitudes, and daily life. Concerns of German intellectuals. Present concerns of the post-1945 generation. Conducted in English.

35FS • Freshman Seminar in German Literature (4) Exner, Mahlendorf
Problems in German literature: The education of a young man as reflected in the German "educational novel".

36FS • Freshman Seminar in German Literature (4) Mahlendorf
Problems in German literature: The esthetic education of man in the 19th and 20th century, the history and development of an idea.

37FS • Freshman Seminar in German Literature (4) Linn
Contrastive studies of literary criticism, Anglo-American and German, of selected works of German literature.

39FS • Freshman Seminar in German Literature via Motion Pictures (2-4) Gottschalk
An introduction to German life, art, and literature as depicted in a number of feature film (synchronized or subtitled in English) based on significant German literary works. Extensive discussion; no term paper.

Upper Division courses

German majors please note that no more than four units of German courses taught in English may be counted toward the major.

101A—B • Advanced Composition and Conversation (4,4) Barraclough
A is prerequisite to B.

102A—B—C • Advanced German Conversation (2,2,2) Barraclough
Prerequisite: German/6 or equivalent. Does not count toward 40 unit German major.

110A—B • Stylistics (4,4) Gottschalk, Konrad
A is prerequisite to B.

115A—B—C • Survey of German Literature (4,4,4)
Prerequisite: German/6 or equivalent. Students should take 115A—B—C concurrently eith 101A—B. **A:** Survey of the Literary Movements of the 20th Century, Exner, Mahlendorf; **B:** Survey of the Literature of Classicism and Romanticism, Atkins, Gottschalk, Hoffmeister, Linn; **C:** Survey of the Literary Movements of the 19th Century, Exner, Linn, Mahlendorf.

120 • History of the German Language (4) Gottschalk, Waterman

121 • Middle High German Literature (4) Staff

124 • Reformation and Baroque Literature (4) Hoffmeister
Selected literary works of the 16th and 17th centuries with emphasis on such authors as Luther, Hans Sachs, Burkard Waldis, Opitz, Grimmelshausen.

126 • Lessing and the Enlightenment (4) Atkins, ahoffmeister, Linn
Studies in the literature of the German Enlightenment with the main emphasis on theoretical and dramatic works of Lessing.

127A—B • Goethe (4) Atkins, Linn
Major works, excluding *Faust*.

128 • Goethe's Faust (4) Atkins, Exner, Mahlendorf

130 • Schiller (4) Atkins, Linn

138 • German Literature in Motion Pictures (3-4) Gottschalk
An introduction to German literature via films; nine full-length films (synchronized or subtitled in English) based upon significant German literary works available in English ranslation; lecture-discussion; no term paper. (Film Studies course.)

139A—B—C • German Literature in Translation (4,4,4) Exner, Linn, Mahlendorf
Selected readings in English translation from the German classics to modern times, including certain works by Schiller, Goethe, Holderlin, Hauptmann, Mann, Kafka, Rilke, Musil, Wedekind, Grass, and Brecht.

141 • German Literature of the 20th Century in English Translation (4) Exner
Representative writers of Naturalism, Neo-romanticism, Expressionism and beyond to the immediate present. Taught in English translation.

142 • The Novella: Early Nineteenth Century (4) Exner, Hoffmeister, Linn
Shorter prose works by authors born prior to 1800.

144 • The Novella: Late Nineteenth Century (4) Exner, Linn
Shorter prose works by authors born after 1800.

146 • Nineteenth Century Lyrics (4) Atkins, Exner
Major poets and poetic movements after Goethe's death and Romanticism. Poets of the "Young Germany" movement, of Poetic Realism, and Naturalism. Attention to questions of prosody.

148 • Nineteenth Century Drama (Kleist to Hauptmann) (4) Linn
The German drama from Kleist to Hauptmann.

149 • The Faust Tradition (4) Exner, Mahlendorf
The Faust legend in literature. Emphasis on the Chapbook, Marlowe, Goethe, and Thomas Mann. Readings and lectures are in English.

151 • Twentieth Century Prose (4) Exner, Mahlendorf
Beginning with Expressionism, studies of the development of German prose in our century. Particular emphasis on the two most recent decades.

153 • Studies in Twentieth Century German Literature (4) Exner, Mahlendorf
One or more major figures will be studied in each quarter: Thomas Mann, Rilke, Kafka, Brecht, Hofmannsthal. May be repeated for a total of 20 units.

155 • Twentieth Century Drama (Post Naturalism) (4) Linn, Mahlendorf
Theory, characteristics and practices of Expressionist drama, epic theater, theater of the absurd, theater of cruelty and post-epic theater. The dramatic work of such authors as the following will be discussed: Wedekind, Kaiser, Sternheim, Toller, Brecht, Durrenmatt, Frisch, Weiss, Grass.

157 • Twentieth Century Lyrics (4) Atkins, Exner, Mahlendorf
Major developments in lyric poetry, beginning with Expressionism; emphasis on post-World War II poets and their work.

159A—F • Great German Writers (4) Atkins, Exner, Gottschalk, Hoffmeister, Mahlendorf
One or more major figure will be studied in each quarter from the following: **A.** Hesse, **B.** Boll, **C.** Kleist & Buchner, **D.** Goethe, **E.** Thomas Mann **(Fall 1975 this course is the same as English/184.), F.** Kafka. May be repeated for a maximum of 12 units. Taught in English.

160 • Proseminar on Great German Writers (4) Atkins, Exner, Gottschalk, Mahlendorf
Prerequisite: German/159 with a grade of B or better or consent of instructor. This course is an undergraduate seminar on authors and topics which were covered in a preceding lecture course on German literature in translation. It should permit sufficiently prepared advanced students to explore German literature in greater depth and to deliver a number of papers orally. Taught in English.

169A—B • The Living German Theater (4,4) Exner, Linn, Mahlendorf
The German theater today: plays, playwrights, and theatrical movements from the 19th century to Post World War II. Readings and lectures in English.

187 • Strauss and Hofmannsthal (4) Exner and Hsu
The collaboration between composer and poet. A study of their correspondence and of the operas, with special emphasis on *Electra*, *Rosenkavalier*, and *Ariadne*. Same course as Music/187.

192 • Truth and Fiction: A Century of German Literature in History (4) Exner and Remak
Prerequisite: Upper Division course in German literature or History/128, and consent of either instructor. German history, 1870-1971, as reflected in German literature. This course is the same as History/192.

***198 • Readings in German** (1-2) Staff
Prerequisite: Upper Division standing.

***199 • Independent Studies in German** (1-5) Staff
Prerequisite: Upper Division standing. 199 courses are limited to five units in one quarter and 12 units total.

Graduate courses

German/201 is a prerequisite for all seminars and should therefore be taken during the first year of graduate studies.

201 • Bibliography and Methods of Criticism (2) Atkins
Orientation course in the tools and methods of German scholarship. Practical exercises in using library resources. S/U grading.

202A—B • Gothic (4,4) Waterman

203A—B • Middle High German Literature (4,4) Staff
Prerequisite: German/121 or equivalent. May be repeated for a maximum of 16 units credit.

204A—B • Old High German (4,4) Waterman
Phonology, morphology, and syntax; grammatical analysis and translation of selected texts.

207 • Renaissance and Reformation (4) Atkins, Hoffmeister

208 • Seminar on Seventeenth Century Literature (4) Hoffmeister

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*See L-2 for 198/199 independent studies unit limitations.

209 • Seminar on Eighteenth Century Literature (4) Atkins, Hoffmeister
Studies in the intellectual and literary-historical background, with particular reference to influences from and parallel developments in England and France. The major writers treated will be Lessing and his contemporaries.

210 • Seminar in Literary Theory and Criticism (4) Atkins
An introduction to methods of literary investigation and their theoretical bases with practical application to specific literary texts and literary-historical topics.

215 • Seminar in Old High German (4) Waterman
Prerequisite: 204A—B. Intensive study of a major Old High German document; introduction to paleography; preparation of critical editions; dialectology and lexicography.

220A—B • History of the German Language (4,4) Waterman
A. Principles of historical-comparative language study; German in its Indo-European and Germanic setting. **B.** German from its historical beginnings with emphasis upon the development of a standardized Schriftsprache in the 16th century.

222 • Seminar in Germanic Linguistics (4) Waterman

225 • Seminar in the History of German Grammar (4) Waterman

226 • Studies in the Age of Goethe (4) Atkins, Linn
Studies with special emphasis on one of the following: **A:** Sturm und Drang, **B:** Kleist, **C:** Holderlin, **D:** the Schlegels, **E:** the Romantic Novel. May be repeated for a maximum of 20 units.

227A—B • Goethe (4,4) Atkins
A: graduate course, **B:** seminar.

228 • Schiller (4) Linn

229 • Seminar on Schiller (4) Linn

230A—B • The Romantic Movement (4,4) Atkins, Linn

231 • Seminar on Romanticism (4) Atkins, Exner

232 • Studies in Nineteenth Century Literature and Thought (4) Exner, Linn
Studies in nineteenth century literature and thought with special emphasis on one of the following major writers: **A:** Heine, **B:** Buchner, **C:** Stifter, **D:** Hebbel, **E:** Grillparzer, **F:** Keller, **G:** Meyer, **H:** Raabe, **I:** Fontane, **J:** Nietzsche, **K:** Schopenhauer. May be repeated for a maximum of 36 units.

235 • Studies in Twentieth Century Literature (4) Exner, Gottschalk, Mahlendorf
Studies in twentieth century literature with special emphasis on one of the following major writers: **A:** Hauptmann, **B:** Mann, **C:** Rilke, **D:** Hofmannsthal, **E:** Kafka, **F:** Brecht, **G:** Benn, **H:** Expressionism, **I:** Hofmannsthal and the tragic, J. Hesse. May be repeated for a maximum of 36 units.

236 • Contemporary Literature (4) Exner, Mahlendorf
Graduate seminar in literature after the second World War.

240 • Studies in the Main Literary Genres (4) Exner, Hoffmeister, Linn, Mahlendorf
Studies in the main literary genres: A. Lyric, B. Drama, C. Novella, D. Novel, E. Essay, F. Tragedy and the tragic element, G. Comedy. This course may be repeated for a maximum of 24 units.

596AA—ZZ • Directed Reading and Research (2-4) Staff
Individual tutorial. A written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in 596.

599AA—ZZ • Dissertation Preparation (2-6) Staff
Only for preparation of the dissertation. Instructor should be the chairman of the student's doctoral committee. S/U grade. Maximum of 12 units total.

Related Courses in Education

Education/SG 390 • Curriculum, Instructional Procedures and Materials Used in the Teaching of German (3-5) Staff
Teaching German language and literature on the high school and college levels. Presentation and content of linguistic and literary courses. A professional course in methods.

Education/SG 392 • Student Teaching: German (3-6) Staff
Required of candidates for a teaching credential with a major or minor in German. S/U grading. May be repeated.

Education/SG 393 • Problems Seminar: Teaching German (1) Konrad

German Translator-Interpreter Program courses

(All courses graded "Satisfactory"/"Unsatisfactory")

400 • Reading of German Texts in "Landeskunde" and Area of Specialty (3) Konrad
For beginning, intermediate and advanced translation students. Tutorial. Required and individually selected texts to be summarized in English.

402 • Oral Comprehension: Exercises in Summarizing or Translating Taped Texts (German to English) (3) Konrad
An introductory course for translating and interpreting. Tutorial. The text selections are literary at first, technical later. Language Laboratory assignments (two hours of lab, assignments to one hour of class). Prerequisite for any further courses in interpretation.

403 • Introduction to Consecutive Interpretation (3) Konrad
Prerequisite: German/302, Oral Comprehension, or equivalent. Workshop. Additional lab work. Consecutive interpretation of dialogues graded for difficulty. Some preparatory topical reading required.

404 • Introduction to Translation (3) Konrad
Fundamental problems of translation demonstrated by typical sentences. Varied topics. Textbook: *Technik des Ubersetzens* by Wolf Friederich. Written assignments.

405 • Consecutive Interpretation (3) Konrad
Prerequisites: German/403, Introduction to Consecutive Interpretation, or equivalent. Interpretation of dialogues and speeches into English; simulated conferences and laboratory exercises.

406 • Translation of General and Technical German Texts into English (Intermediate) (3) Konrad
Prerequisite: German/404, Introduction to Translation, or equivalent. Course conducted with teaching aids in the Language Laboratory; one weekly class meeting. Texts selected individually in student's specialty. Written assignments.

408 • Writing and Translation of Business Materials (3) Konrad
Special emphasis on business terminology. Written assignments. Includes required reading in German in the field of business.

410 • Summarizing of Specialized German Texts in English (3) Konrad
Prerequisites: German/402, Oral Comprehension, German/404, Introduction to Translation, or equivalent. Written assignments.

412 • Translation of Specialized Texts from German into English. Advanced Level (3) Konrad
Prerequisites: German/406, Translation of general and technical German Texts, or equivalent. Written assignments.

414 • Translation of General or Specialized Texts into German (3) Konrad
Prerequisites: German/412, Translation of Specialized Texts from German into English, or equivalent. Written assignments.

Russian

Lower Division courses

1 • Elementary Russian (4) Kostruba
Beginner's course offered in the Fall quarter only.

2 • Elementary Russian (4) Kostruba
Continuation of 1.

3 • Elementary Russian (4) Kostruba
Continuation of 2.

4 • Intermediate Russian (4) Kostruba
Continuation of 3.

5 • Intermediate Russian (4) Kostruba
Continuation of 4.

6 • Intermediate Russian (4) Kostruba
Continuation of 5.

8A—B—C • Conversation and Composition (2,2,2) Kostruba
Prerequisites: Russian/1 and 2. Practice in speaking and writing Russian. Conversation, discussion and composition on assigned topics. To be taken concurrently with Russian/3, 4, 5 or 6.

11A—B • Russian for Graduate Students (4,4) Staff

32 • Russia Today (4) Moody
Introductory survey with emphasis on current scene. Topics: intellectual dissent, ethnic minorities, popular culture, national character, etc. Lectures and readings in English.

Upper Division courses

101A—B—C • Advanced Russian: Third Year (4,4,4) Moody
Prerequisite: Russian/6 or consent of instructor. Introduction to extensive reading of Russian prose with discussion and composition in Russian.

102 • Russian Composition (4) Staff
Prerequisite: Russian/6 or consent of instructor. Designed to help develop writing skills in Russian.

103 • Chekhov's Short Stories (4) Moody
Prerequisite: Russian/6 or consent of instructor. Reading and analysis of a sampling of works from Chekhov's various periods. Reading, discussion and composition in Russian.

105 • Pushkin (4) Kaspin
Prerequisite: Russian/6 or consent of instructor. Reading of important works in the original, discussion, and composition. Conducted in Russian.

108A • The Russian Language: Phonetics & Phonemics (4) Johnson

Prerequisite: Russian/6 or consent of instructor. Basic principles of articulating phonetics and of phonemics. Contrastive study of Russian and English sound systems. Russian phonemic theory.

108B • The Russian Language: Morphology (4) Johnson
Prerequisite: Russian/6 or consent of instructor. A study of Russian word formation. Primary focus is on the verb system.

115A—B • Survey of Russian Literature (4,4) Kaspin, Moody
Reading and discussion in English of representative novels and short stories of Pushkin, Lermonton, Gogol, Turgenev, Goncharov, Dostoevsky, Tolstoi, Chekhov, and others.

120 • Russian Drama (4) Kaspin

121 • The Russian Short Story (4) Moody
Prerequisite: Russian/6 or consent of instructor. Analysis and discussion of various forms of the short story by Russian writers. May be repeated for eight units total.

122 • The Novella (4) Kaspin
Prerequisite: Russian/6 or consent of instructor. May be repeated for eight units total.

123 • Russian Poetry of the Nineteenth Century (4) Staff
Prerequisite: Russian/6 or consent of instructor. A study of representative works of the major nineteenth century poets, (e.g., Pushkin, Lermontov, Tyutchev, Fet, Nekrasov), with attention to each work's relationship to the history of the development of Russian poetry generally and its place in the author's career. All work to be done in Russian.

125 • Twentieth Century Russian Literature (4) Moody

130 • Dostoevsky (4) Kaspin
A study of Dostoevsky's principal novels and short stories in their historical and cultural contexts. Lectures and readings in English.

131 • Tolstoy (4) Kaspin
A study of Tolstoy's principal works in their historical and cultural contexts. Lectures and readings are in English.

132 • Solzhenitsyn (4) Moody
A study of the work of the 1970 Nobel Prize winner for Literature. Lectures and readings in English.

133 • Chekhov (4) Kaspin
Short stories and plays. Lectures and readings in English.

134 • Nabokov (4) Johnson
A study of Nabokov's principal writings with particular attention to their Russian background. Lectures and readings in English.

140 • Problems in Translation (4) Kaspin
Prerequisite: Russian/6 or consent of instructor. Techniques of translating literary materials, both from English into Russian and from Russian into English.

150 • Russian Folk Literature (4) Kaspin
The myths, epics, folk tales, folk lyrics, and other oral forms. Lectures and readings in English.

***199 • Independent Studies in Russian** (1-5) Staff
199 Courses are limited to five units in one quarter and 12 units total.

Graduate courses

596 • Directed Reading and Research (2-4) Staff
Individual tutorial. A written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter.

Swedish

Lower Division courses

1 • Elementary Swedish (4) Lundell
Beginner's course offered in the Fall quarter only.

2 • Elementary Swedish (4) Lundell
Continuation of 1.

3 • Elementary Swedish (4) Lundell
Continuation of 2.

8A—B—C • Swedish Conversation (2,2,2) Lundell
Prerequisite: Swedish/3 or equivalent.

***198 • Readings in Swedish** (1-2) Lundell
Prerequisite: Upper Division standing.

***199 • Independent Studies in Swedish** (1-5) Lundell
199 courses are limited to five units in one quarter and 12 units total.

Scandinavian

Upper Division courses

139A—B—C • Scandinavian Literature in Translation (4,4,4) Lundell
A: Tale, Vision; **B:** Drama; **C:** Prose.

140 • Swedish Film (4) Lundell
Ingmar Bergman is the focal point for the course which also presents directors preceding the Bergman era and contemporary attempts to break away from the Bergman tradition. The course also presents Carl Dreyer and his relation to the development of Swedish cinema. Readings and lectures are in English. (Film studies course.)

Foreign literature and film in English translation

(Literature courses for which no knowledge of a foreign language is required.)

German

138 • German Literature in Motion Pictures (3-4) Gottschalk
An introduction to German literature via films; nine full length films (synchronized or subtitled in English) based upon significant German literary works available in English translation; lecture-discussion; no term paper.

139A—B—C • German Literature in Translation (4,4,4) Exner, Linn, Mahlendorf
Selected readings in English translation from the German classics to modern times, including certain works by Schiller, Goethe, Holderlin, Hauptmann, Mann, Kafka, Rilke, Musil, Wedekind, Grass, and Brecht.

141 • German Literature of the Twentieth Century in English Translation (4) Staff

149 • The Faust Tradition (4) Exner, Mahlendorf
The Faust legend in literature. Emphasis on the Chapbook, Marlowe, Goethe, and Thomas Mann.

159 • Great German Writers (4) Atkins, Exner, Gottschalk, Hoffmeister, Mahlendorf
One or more major figures will be studied in each quarter from the following: A. Hesse, B. Boll, C. Kleist & Buchner, D. Goethe, E. Thomas Mann, F. Kafka. May be repeated for a maximum of 12 units. (Fall 1975 this course is the same as English 184.)

160 • Proseminar on Great German Writers (4) Atkins Exner, Gottschalk, Mahlendorf.
Prerequisite: German/159 with a grade of B or better or consent of instructor. Seminar on authors and topics covered in preceding lecture course on German literature in translation. It should permit sufficiently prepared advanced students to explore German literature in greater depth and to deliver a number of papers orally.

169A—B • The Living German Theater (4,4) Exner, Linn, Mahlendorf
The German theater today: plays, playwrights, and theatrical movements from the 19th century to Post World War II.

187 • Strauss and Hofmannsthal (4) Exner, Hsu
The collaboration between composer and poet. A study of their correspondence and of the operas, with special emphasis on *Electra, Rosenkavalier*, and *Ariadne*. Same course as Music/187.

192 • Truth and Fiction: A Century of German Literature in History (4) Exner, Remak
Prerequisites: Upper Division course in German literature or History/128, and consent of either instructor. German history, 1870-1971, as reflected in German literature. This course is the same as History/192.

Russian

115A—B • Survey of Russian Literature (4,4) Kaspin, Moody
Reading and discussion in English of representative novels and short stories of Pushkin, Lermontov, Gogol, Turgenev, Goncharov, Dostoevsky, Tolstoi, Chekhov and others.

120 • Russian Drama (4) Kaspin

125 • Twentieth Century Russian Literature (4) Moody
A survey of Russian literature from the early twentieth century.

130 • Dostoevsky (4) Kaspin
A study of Dostoevsky's principal novels and short stories in their historical and cultural contexts.

131 • Tolstoy (4) Kaspin
A study of Tolstoy's principal works in their historical and cultural contexts.

132 • Solzhenitsyn (4) Moody
A study of the work of the 1970 Nobel Prize winner for Literature.

133 • Chekhov (4) Kaspin
Short stories and plays.

134 • Nabokov (4) Johnson
A study of Nabokov's principal writings with particular attention to their Russian background.

150 • Russian Folk Literature (4) Kaspin
The myths, epics, folk tales, folk lyrics, and other oral forms.

Scandinavian

139A—B—C • Scandinavian Literature in Translation (4,4,4) Lundell
A: Tale, Vision; **B:** Drama; **C:** Prose.

140 • Swedish Film (4) Lundell
Ingmar Bergman is the focal point for the course which also presents directors preceding the Bergman era and contemporary attempts to break away from the Bergman tradition.

*See L-2 for 198/199 independent studies unit limitations.

Hispanic Civilization

Committee in Charge

Philip W. Powell, Ph.D., Professor of History.
Winston Reynolds, Ph.D., Professor of Spanish.
Jorge de Sena, Ph.D., Professor of Portuguese and Comparative Literature.
Jorge R. Fontana, Ph.D., Professor of Electrical Engineering.
Francis A. Dutra, Ph.D., Associate Professor of History (Chairman of the Committee).

Concerns of the program

The interdepartmental major in Hispanic Civilization is designed to serve the needs of the following: (1) those planning careers which will necessitate residence in, or knowledge of, the countries of Spanish and Portuguese speech and culture — for example, government service, business, journalism; (2) students preparing for graduate study in the social sciences or languages and literature, with special emphasis in the Spanish, Portuguese, and Latin-American fields; (3) students desiring a general education with some emphasis in this particular area of Western Culture. The geographical areas included in the scope of this major are Spanish-America, Brazil, Spain, and Portugal.

The following required courses, and those recommended, form a general guide. Selection of specific courses will be made by the student in consultation with the committee in charge, and this selection will be based primarily upon the needs and objectives of the individual student. Credit may be given for studies undertaken in Spanish, Portuguese, or Latin-American schools.

Bachelor of Arts

Preparation for the major

Required courses

(1) Spanish/**25 • Advanced Spanish** (5), or Portuguese/**101A—B—C • Advanced Reading and Composition** (4,4,4)
(2) History/**108A—B • Comparative History of the Americas** (4,4)

Recommended courses

History/**4A—B—C • Western Civilization** (4,4,4)
Portuguese/**101A—B—C • Advanced Reading and Composition** (4,4,4) or or Spanish/**25 • Advanced Spanish** (5), whichever is not taken as the required course (see above)

Upper Division major

A minimum of 40 units is required as follows:

Required courses (16 units)

(1) Eight units from the following History courses:

150A—B • Spain and Spanish Empire (4,4)
151A—B—C • Hispanic-American History (4,4,4)
154A—B • Portugal Overseas (4,4)
155A—B • History of Portugal (4,4)

(2) Eight units from among courses listed below in Spanish and Portuguese literature:

Spanish literature

110A—B—C • Survey of Spanish Literature (4,4,4)
111A—B • Survey of Spanish-American Literature (4,4)
117 • Essayists of Spain and Spanish America (4)
122A—B • Medieval Spanish Literature (4,4)
123A—B • El Romancero (4,4)
124A—B • Introduction to the Theory of Literary Criticism (4,4)
131A—B • Golden Age Poetry (4,4)
134 • Golden Age Prose (4)
137A—B • Golden Age Drama (4,4)
140A—B • Cervantes: *Don Quijote* (4,4)
141 • Cervantes: Other Works (4)
145 • Colonial Spanish American Literature (4)
161 • Spanish Romanticism (4)
165A—B • XIX Century Spanish Fiction (4,4)
170A—B • Spanish Literature from 1898 to 1936 (4,4)
175 • Contemporary Spanish Literature (4)
183 • Studies in Hispanic Literatures (4)
185A—B • Modern Spanish American Novel (4,4)
186A—B • Modern Mexican Literature (4,4)
187A—B • Modern Spanish American Drama (4,4)
189 • Modern Spanish American Poetry (4)
191A—B—C • The Theme of *Don Juan* in Spanish Literature (4,4,4)
197 • Individual Hispanic Authors (4)

Portuguese literature

105A—B—C • Survey of Portuguese Literature (4,4,4)
106A—B—C • Survey of Brazilian Literature (4,4,4)
132A—B • Luis de Camoes (4,4)
185 • Brazilian Novel of the 20th Century (4)
189 • Brazilian Modernism (4)
*199 • **Independent Studies** (1-5)

The remaining 24 units may be chosen freely according to the student's individual interest either from among the courses listed above in History, Spanish and Portuguese, or from the additional ones listed below:

History

152B • Intellectual History of Spanish America: Modern Period (4)
152L—M—N • Social History of Indo-America (4,4,4)
156A—B • History of Mexico (4,4)
157A—B • History of Brazil (4,4)
157C • Intellectual History of Brazil: Modern Period (4)
158A—B • History of Inter-American Relations (4,4)

Hispanic Culture and Linguistics

Spanish

100 • The Spanish Language: A Linguistic Approach (4)
101 • American Spanish (3)
105 • Advanced Spanish Translation (4)
107 • Languages In Contact (4)
119A—B • Spanish Institutions and Culture (4,4)
121A—B • History of the Spanish Language (4,4)
150 • XVIIIth Century Spanish Culture (4)
176 • Contemporary Spanish Culture (4)
177A—B • Spanish American Culture (4,4)
178 • Mexican Culture (4)
178 • Mexican Culture (4)

Portuguese

102A—B • Advanced Grammar and Composition (4,4)

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*See L-2 for 198/199 independent studies unit limitations.

Hispanic Literature in English: A maximum of eight units in the following courses in Portuguese and Spanish literature in translation may be taken with the consent of the Adviser.

Portuguese

114 • Literature of the Portuguese Expansion (4)
115 • Brazilian Literature in English translation (4)
121A—B • History of the Portuguese Language (4,4)
125A—B • Culture and Civilization of Portugal and Brazil (4,4)

Spanish

115A—B • Masterpieces of Spanish Literature in English translation (4,4)
116 • Juan Ruiz: The Book of Good Love (4)
120A—B • Spanish American Literature in English translation (4,4)
142 • Don Quixote (4)
180 • Mexican Civilization—unless Spanish/178 has already been taken (4)
181 • Social Poetry of Spain and Latin America in English translation (4)
118 • Latin American Black Poetry in English translation (4)

Anthropology

133 • Cultural Development In MesoAmerica (4)
134 • Modern Cultures of Latin America (4)
135 • Modern Mexican Culture (4)
193 • Problems in MesoAmerican Prehistory (4)

Art

154B • Pre-Columbian Art of South America (4)
154C • Pre-Columbian Art of Mexico and Central America (4)
161C • Art In Colonial Spanish America (4)
161D • Hispanic American Arts (4)
161E • Modern Mexican Painting (4)
163B • Spanish Art, Renaissance and Modern (4)

Medieval Studies

100 • Medieval Spain (4)

Music

116A—B • History and Literature of Hispanic-American Music (4,4)

Political Science

132 • Latin America in World Affairs (4)
148A—B • Governments of Latin America (4,4)
190L • Latin American Workshop (2)

Master of Arts

Students who wish to pursue work toward the Master of Arts degree in Hispanic Civilization at UCSB must meet the general requirements for admission to graduate standing. Completion of the undergraduate major in Hispanic Civilization is desirable but not necessary. Undergraduate deficiencies as stipulated by the Hispanic Civilization Committee must be made up in the first year and do not count in satisfaction of graduate degree unit or course requirements. A good reading knowledge of either Spanish or Portuguese is strongly recommended as prerequisite for admission into the program. At the outset of graduate work, students should confer with the Chairman of the Hispanic Civilization Committee.

The Master of Arts degree in Hispanic Civilization will be awarded to students who satisfy the requirements prescribed by the Graduate Council and who, in addition, meet the following requirements:

1. Foreign Language A very good reading knowledge of Spanish or Portuguese is absolutely required. The student must pass a reading examination in at least one of the above-mentioned languages. It is expected that the candidate will meet this requirement during the first quarter of the graduate program. In no case may the student take the Comprehensive Examination or submit a thesis until the foreign language requirement has been met.

2. Program of Study Individual student programs must be approved by the Chairman of the Hispanic Civilization Committee. The following two plans are available:

Plan I — The student must complete at least 30 units of Upper Division and graduate course work dealing with Hispanic Civilization and write a thesis (six additional units). The 30 units must include not less than 16 in graduate work. At least eight graduate units must be taken in each of two departments. The student (with the consent of the Hispanic Civilization Committee) may choose a thesis adviser, but the finished thesis must be approved by a committee consisting of the thesis adviser and two additional faculty members appointed by the Chairman of the Hispanic Civilization Committee.

Plan II — The student must complete at least 36 units of Upper Division and graduate course work dealing with Hispanic Civilization. The 36 units must include not less than 20 units of graduate work. At least eight but preferably 12 or more, graduate units must be taken in each of two departments. A student who elects *Plan II* must demonstrate graduate level ability in research and writing and submit to the Hispanic Civilization Committee two term papers written for any graduate courses taken. After approval by the Committee, the candidate will be permitted to go on to the Comprehensive Examination. The latter will be administered by an examination committee of three Faculty members appointed by the Chairman of the Hispanic Civilization Committee and will cover the major course work of the student and any other additionaleading deemed pertinent.

Courses available There are at the present time nine research and several reading seminars available in the History Department; 20 in Spanish; seven in Portuguese; one in Political Science; one in Art and two in Anthropology. It is to be hoped that other academic units, such as Music and Economics, may offer from time to time graduate seminars in fields of interest to Hispanic Civilization students.

Francis Price Award in Hispanic Studies

The Hispanic Civilization Committee each year selects the recipient or recipients of the Francis Price Award, a cash prize that was established by the Hispanic Society of Santa Barbara in 1959 and named for its founder. The award is currently supported by Francis Price, Jr., in memory of his father. It is given to the junior or senior student (or students) who has demonstrated outstanding proficiency in the Spanish or Portuguese language or in other aspects of Hispanic culture, who is specializing in Hispanic studies, and who intends to continue such studies at the University of California, Santa Barbara. The prize is based not on student need but solely on scholastic achievement and promise in Hispanic studies.

Hispanic Civilization Lecture

This Committee also sponsors an annual lecture on some aspects of Hispanic Civilization by a distinguished visiting lecturer.

Correspondence information

Those desiring additional information should write: Chairman, Hispanic Civilization, University of California, Santa Barbara, California 93106 Phone: (805) 961-2991

History

Professors

Henry M. Adams, Ph.D., Stanford; *(Emeritus)*; Prussia and Germany.

[3]*Morton Borden*, Ph.D., Columbia; early national U.S.
A. Russell Buchanan, Ph.D., Stanford; *(Emeritus)*; recent U.S.
Robert O. Collins, Ph.D., Yale; Africa.
Alexander DeConde, Ph.D., Stanford; U.S. diplomatic.
Dimitrije Djordjevic, Ph.D., University of Beograd; Southeast Europe.
Donald M. Dozer, Ph.D., Harvard; *(Emeritus)*; Latin America.
[1]*Alfred M. Gollin*, D. Litt., D. Phil., (Oxon.); modern Britain.
Otis L. Graham, Jr., Ph.D., Columbia; twentieth century U.S.
George M. Haddad, Ph.D., Chicago; Middle East.
[1]*C. Warren Hollister*, Ph.D., UCLA; medieval.
Immanuel C. Y. Hsu, Ph.D., Harvard; modern China.
Wilbur R. Jacobs, Ph.D., UCLA; colonial and revolutionary U.S.
[4]*Robert L. Kelley*, Ph.D., Stanford; American intellectual & political history.
[4]*Harold C. Kirker*, Ph.D., Berkeley; American cultural.
Leonard M. Marsak, Ph.D., Cornell; European intellectual.
[3]*Roderick W. Nash*, Ph.D., Wisconsin; American environmental & popular cultural.
Richard E. Oglesby, Ph.D., Northwestern; The American West (Chairman).
Philip W. Powell, Ph.D., Berkeley; Spain and Spanish Empire.
[2,3]*Joachim Remak*, Ph.D., Stanford; modern Europe.

Associate Professors

Lawrence Badash, Ph.D., Yale; history of science.
F. A. Bonadio, Ph.D., Yale; Civil War.
W. Elliot Brownlee, Ph.D., Wisconsin; American economic.
Alexander B. Callow, Ph.D., Berkeley; American urban.
[1]*Chi-yun Chen*, Ph.D., Harvard; ancient China.
Francis A. Dutra, Ph.D., New York University; Brazil and Portugal.
Abraham Friesen, Ph.D., Stanford; Renaissance-Reformation.
Frank J. Frost, Ph.D., UCLA; ancient Greece.
Stephen N. Hay, Ph.D., Harvard; India.
G. Wesley Johnson, Ph.D., Columbia; Africa.
[1,2]*Albert S. Lindemann*, Ph.D., Harvard; modern European socialism.
[4]*Carroll W. Pursell, Jr.*, Ph.D., Berkeley; American technology.
Paul M. Sonnino, Ph.D., UCLA; early modern Europe.
[4]*John E. Talbott*, Ph.D., Stanford; France.

Assistant Professors

William H. Alexander, Ph.D., Stanford; European intellectual-cultural.
Jesus Chavarria, Ph.D., UCLA; Latin American social.
Harold A. Drake, Ph.D., Wisconsin; Rome.
Carl V. Harris, Ph.D., Wisconsin; American South.
Matthew V. Lamberti, Ph.D., Columbia; Japan.
James C. McClelland, Ph.D., Princeton; Russia.
J. Sears McGee, Ph.D., Yale; Tudor Stuart.
Lillian E. A. Poe, Ph.D., College of William and Mary; AfroAmerican.
Joan M. Reitzel, Ph.D., Brown; medieval.

Lecturers

Donald C. Davidson, Ph.D., Berkeley; Canada.
Arnold M. Paul, Ph.D., UCLA, J. D. Stanford; American constitutional.

Acting Assistant Professors

Mario T. Garcia, Ph.D., UCSD; Chicano.

Concerns of the department

The History Department (1) provides all undergraduates with the opportunity to obtain a broad understanding of the histories of Western and other civilizations; (2) makes available to students a wide range of courses that may be taken for credit as electives; (3) offers a major leading to the Bachelor of Arts degree; (4) offers graduate programs leading to the degrees of Master of Arts and Doctor of Philosophy; and (5) collaborates with a variety of other departments in such programs as African Area Studies, Asian-American Studies, Asian Studies, Black Studies, Chicano Studies, Environmental Studies, Hispanic Civilization, Medieval Studies, Russian Area Studies, and the Combined Social Sciences Major.

Bachelor of Arts

Preparation for the Major

Required in Lower Division: History/4A—4B—4C (12 units) plus 12 other Lower Division history units, of which at least eight must be in the history of countries or cultures outside of Europe, including at least four units in non-Western history (Asia, Africa, Middle East).

Upper Division major

Required: 40 units of Upper Division work in history, four units of which must be History 195. Upper Division Q courses may be acceptable in lieu of 195. Information available from instructors of Q courses.

Although the History Department does not require a foreign language, those interested in history outside the English-speaking world and those who contemplate graduate studies will be well advised to take a foreign language.

Substitution of requirements for major

Students who have reached Upper Division status without having completed the Lower Division requirements for the major are permitted to substitute up to 12 units of Upper Division courses for the Lower Division requirements on a one-for-one basis without the need to petition. A list of acceptable substitutes may be obtained at the History Department office.

Courses thus substituted may not be used to fulfill the required 40 units of Upper Division work for the major in history, though credit will be applied toward the 60 units in Upper Division courses required for the B.A. degree.

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[1] Absent on leave Fall 1975.
[2] Absent on leave Winter 1976.
[3] Absent on leave Spring 1976.
[4] Absent on leave 1975-76.

Departmental counseling

Certain members of the departm~~ent~~ are designated as undergraduate counselors. Every history major is assigned to one of these counselors. Separate advisers are provided for M.A. and Ph.D. candidates.

Master of Arts

Students who wish to pursue work toward the Master of Arts degree in History at the University of California, Santa Barbara, must meet the general requirements for admission to graduate standing. In addition they will be expected to have completed an undergraduate major in history or its equivalent. Undergraduate deficiencies as stipulated by the Department must be made up in the first year, and do not count in satisfaction of graduate degree unit or course requirements. At the outset of their graduate work, students should confer with the departmental M.A. Adviser.

The Department of History regards its M.A. degree program as a general rather than a specialized program. The entrance requirements for both the M.A. and the Ph.D. programs are virtually the same, so that the decision to enter the M.A. program amounts to a preference for training in general rather than more specialized fields. (Please note, however, that even the Ph.D. program has important general aspects.) The M.A. candidates should particularly notice that the department offers reading courses (H200) designed to cover large, general fields, whereas the H201s are reading courses likely to cover more specialized fields.

The Master of Arts degree will be awarded to students who satisfy the requirements prescribed by the Graduate Council and who, in addition, meet the following requirements of the Department of History.

1. Foreign Language The passing of a reading examination in at least one foreign language approved by the Department. It is expected that the candidate will meet this requirement during the first quarter of the graduate program. In no case may the Comprehensive Examinations be taken until the foreign language requirement has been met.

2. Units of work The completion of 36 units of Upper Division and graduate history courses with at least a "B" average. At least 20 of these units must be in the graduate courses numbered between 200 and 290, including at least eight units in research seminars (numbered between 202 and 290). With the permission of the professor who will supervise the work, a candidate may write a thesis within his field of specialization in partial fulfillment of the Master of Arts requirements. The student will be allowed a maximum of six units of credit for the thesis (these units will not count as a substitute for one of the two research seminars). The thesis must be approved by a committee consisting of two departmental and one extradepartmental members. Its membership will be selected by the departmental Graduate Committee.

3. Comprehensive examinations The candidate for the M.A. degree must pass a written three hour examination in one field selected from any of the following three groups:

Group I	Group II	Group III
Ancient History	East Asia before 1800	United States to 1865
Medieval History	East Asia since 1800	United States since 1840
Modern Europe, 1450 to 1815	South Asia	Latin America, Colonial Period
	Near Eastern History	Latin America, National Period
Modern Europe, 1789 to present	Africa	U.S. History with Special Emphasis on Afro-American, Chicano, or Native American History

In addition the student must elect one of the following options:

(1) A second three-hour examination in one field chosen from a group other than that of the first examination.

(2) A thesis on a subject to be determined in consultation with his adviser. The thesis subject must fall within the context of a field other than that of the first examination, but not necessarily a different group.

No candidate may be allowed to take the M.A. examination more than twice.

Doctor of Philosophy

Ph.D. graduate applications for Fall must be received in the Graduate Division by April 15.

The History Department offers a program leading to the Ph.D. degree with specialization available in most areas of history. Students seeking admission to the doctoral program should apply to the Chairman of the Department.

Admission

The Graduate Committee of the Department of History may admit a beginning graduate student directly into the Ph.D. program if the student does not seek terminal M.A. degree and meets the standards for admission. The following factors are considered in the assessment of a student's record: Intellectual attainment, skill in the use of the English language, academic honors, letters of recommendation, practical experience where relevant, and information obtained from interviews.

Any student who has been admitted to the doctoral program, but who is unable to complete it, may ask to be considered for a terminal M.A. degree. If the student has passed one foreign language examination, and if the Doctoral Committee finds that the student has approximately met the unit requirements for the M.A., that committee may then recommend that the student be eligible to take two M.A. comprehensive examinations according to the regulations established for the regular M.A. candidates.

Residence At least six quarters in residence of full-time study and research in the doctoral program.

Languages The minimum language requirement is proficiency in one foreign language relevant to the candidate's field of study.

The student is urged to complete the foreign language requirement as soon as possible, but in no case later than the end of the second year in the doctoral program. *No student will be allowed to take the general examinations for the Ph.D. degree without having completed the language requirement.*

The program

The program falls into two parts: Preparation for and passage of the general doctoral examinations; preparation of the disseration.

Preparation for general examinations Upon admission and arrival at Santa Barbara, the student must confer with the Director of Doctoral Studies who will explain all requirements and assign the candidate's Doctoral Adviser under whom the student will work. The Doctoral Adviser will be a specialist in the student's desired field of historical specialization, and will act as chairman of the examination committee. This committee will consist of the three professors under whom the student will be doing doctoral work in the historical fields as well as one professor in the outside field to be presented for examination. The membership of the committee will be recommended by the candidate's Doctoral Adviser and approved by the Director of Doctoral Studies and the Graduate Dean, and entered upon the student's graduate record card.

During the first quarter, the student, in consultation with his Doctoral Adviser, will select the three fields of history and one related field of study that will be presented in the qualifying examination. The outside field must be comparable in size and scope to the history fields. One field of general historical study must be chosen from the list below, as well as a second field consisting of a specialized historical area within the general field. The specialized field will usually embrace the doctoral dissertation. A third field of historical specialization outside of the general field, and a fourth field related to, but outside of the history department, will also be required.

General Fields

1. The United States
2. Modern Europe
3. Latin America
4. Medieval Europe
5. East Asia
6. The Middle East
7. South Asia
8. The Ancient Mediterranean World
9. Africa
10. Science and Technology.

The candidate's Doctoral Adviser will recommend to the Director of Doctoral Studies the four fields to be presented by the candidate. Once the Director of Doctoral Studies, acting for the department, approves these fields, they will be entered upon the student's graduate record card. Changes in the fields will not be made later than six months before the general examinations are taken.

The student will be expected to have taken, prior to the general examinations, at least six quarters of history research seminars, four quarters of which must be taken beyond the M.A. degree or its equivalent. The student must take either a graduate research seminar or another graduate course in each of the four areas presented for examination. The student is urged to take a course in historiography if he has not done so prior to admission to the doctoral program. History 201 courses are not traditional research seminars. They emphasize interpretation and are directed at analysis of the historical literature of the various fields in which they are given. History 596 is not acceptable in lieu of a 201. History 599 is designed to provide unit credit for students who are working on their doctoral dissertations (no more than six units a quarter). Reading programs for the Ph.D. general examinations should be developed in consultation with the members of the examination committee. It is the duty of the student and Doctoral Adviser — and not the Director of Doctoral Studies, the Ph.D. Committee, or the Graduate Secretary — to see that all of these requirements are met prior to examination and that the student's office file is kept fully up to date.

Qualifying examinations for the Ph.D. are given annually at the beginning of October, January and May. They should normally be taken no later than two full-time years after the student has entered the program. Within a period of one month the student will take two written examinations from his history fields; each examination will be of three hours' duration. Within one week of passing these written examinations, he will present himself for an oral examination of at least two hours duration in all four fields. The written examinations must be passed before the orals are taken. The selection of fields to be taken in the written examinations is to be approved by the Doctoral Adviser.

Dissertation The doctoral dissertation must be an original work of historical research in the field of the candidate's specialization, bringing new data or new interpretations to bear on historical problems or exploring untouched, but significant historical fields. It must be written in clear prose, must have intellectual depth, and must demonstrate a mastery of historical methodology.

Except as authorized by the Graduate Council, each student in a doctoral program must satisfy all requirements for the Ph.D. within seven calendar years after being admitted to the Ph.D. program.

The examination committee will also serve as the dissertation committee. The committee's approval of the topic of the dissertation will constitute a departmental commitment, subject only to questions of quality. Upon approval of the dissertation by the committee, the candidate may be asked to appear at a date to be established by his Doctoral Adviser for a Special Examination (oral) in the field of the dissertation.

TA A candidate will normally be expected to hold a teaching assistantship for at least one year, but this requirement may be waived under special circumstances.

Doctoral programs in the Department of History are offered in all fields of history. *More detailed information may be obtained from the chairman of the department.*

Career opportunities

This major provides students with a systematic and thorough background in history valuable in such careers as education, law, and governmental service, among others.

Teaching credentials

Students who complete a major in history may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Consult with designated counselors in the Department of History for any special requirements in this field.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Department of History, Ellison Hall, Room 4834, University of California, Santa Barbara, California 93106 Phone: (805) 961-2991.

History

Lower Division courses

4A—B—C • Western Civilization (4,4,4) Staff
4A • Prehistory to 1050 A.D., 4B • 1050—1715 and 4C • 1715—Present.

4A(S)—4B(S)—4C(S) • Western Civilization (1,1,1) Staff
After 4A—B—C begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminar, 4S, or a total of five units for History 4.

5FS • Freshman Seminar (4) Talbott
Explores the question: What is History? The French Revolution is employed to examine the problem of how and why men study the past.

6 • Introduction of History (2) Staff
Weekly meetings with different members of the department for a presentation and open discussion of methods and problems in their fields and of the nature of history as a discipline. Each student will write a term paper on one or more aspects of this question.

8Q • Topical Studies in the History of the Western Hemisphere (4) Dutra
Prerequisite: Consent of instructor. Tutorial guidance in individual reading programs and seminar discussions.

9FS • Freshman Seminar (4) Dutra
A reading and disussion course focusing on the social history of North and South America with a special emphasis on the interaction of Europeans, Native Americans, and Africans. Limited in enrollment to 12.

12 • Greeks and Barbarians (4) Frost
Prerequisite: Lower Division standing. The story of the first great conflict between East and West, as told by the father of history, Herodotus.

13 • The Ides of March (4) Drake
Causes and consequences of the most famous date in Roman history, explored through literature, film, and ancient sources.

17—B • The American People (4,4) Staff
The origins and development of American society. This course will explore topics such as the role of cultural diversity in consensus and conflict, the interaction of social, political, and economic life, and the growth of influential ideas.

17A(S)—17B(S) • The American People (1) Staff
After History 17 begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminar (17S) or a total of five units for History 17 per quarter.

19 • The Rise of Communist China (4) Hsu
Examination of domestic and foreign factors leading to the rise of the People's Republic of China. The role of the United States will be stressed.

24 • Modern Yugoslavia (3) Djordjevic
The creation of Yugoslavia, Interwar political, social, economic development. World War II: Yugoslavism in crisis. Revolution and break with Russia. Twenty-five years of socialistic experiment.

46 • Survey of Middle Eastern History (4) Haddad
Emphasis on the meeting of civilizations in the Middle East, modernization and reform movements, and the background to contemporary problems and tensions.

49 • Lost Kingdoms of Africa (Pre-Colonial History of Africa) (4) Johnson
This course will serve as an introduction to Upper Division work on the history of Africa. It will put forth basic conceptual ideas on studying Africa and give about a dozen case studies of traditional societies.

60FS • Freshman Seminar (4) Harris
The seminar will explore the attempts by historians to understand the development of racial segregation in the United States and to explain the divergence in the patterns of race relations in North America and Latin America.

72 • The Modern American Mind (4) Kelley
An exploration of leading currents in modern thought. Particular attention to William James, Sigmund Freud, Erik Eriksen, and to such broad social movements as the youth culture, social prejudice, and the impact of science.

74 • Science, Technology & American Society (4) Pursell
A reading and discussion course of limited enrollment, aimed at exploring selected topics in the history of science, technology, and their relations with American society in general.

78FS • Freshman Seminar (4) Callow
A discussion and reading course concerning the critical problems that plague the city today, such as poverty, minority groups, crime and the police, politics, and city planning.

79FS • Freshman Seminar (4) Jacobs
Research seminar in American Indian-White relations for freshman students.

81 • History and Culture of South Asia (4) Hay
An introduction to the cultural traditions and patterns of historical development of the countries of South Asia (India, Bangladesh, Pakistan, Ceylon, Nepal, and Afghanistan), from prehistoric times to the Gandhian era.

86 • China's Cultural Tradition (4) Chen
A brief survey of China's magnificent cultural achievements in the past, and a study of how the great tradition became an impediment to revolutionary changes and in what way it still shapes the course of the present revolution.

87 • East Asian Civilization (4) Lamberti
Introduction to the ideas and culture that have shaped the history of China and Japan from earliest times to the seventeenth century.

89 • Recent Japan (3) Lamberti
A critical study of problems related to defeat, occupation, the cold war, economic resurgence, security and trade, and an uncertain future; attention is drawn to social reconstruction and the changes in culture and politics between 1945 and the present.

Upper Division courses

101A—B • History of the Chicanos (4,4) Garcia
The history of the Chicanos, 1821 to the present; traces the social-cultural lifeline of the Mexicans who have lived north of Mexico.

Same as Chicano Studies/101A—B.

101Q • Special Studies in Chicano History (4) Garcia
Studies in selected aspects of Chicano history with an emphasis on social and economic history.

Same as Chicano Studies/101Q.

102 • European Historiography (4) Friesen
Prerequisite: History/4A—B—C, or equivalent. The study of the development of history as an independent discipline and the influence of intellectual and other trends or events upon the interpretation of history from the Greeks to the Moderns.

105 • The Atomic Age (4) Badash
The history of military and civilian uses of nuclear energy and the attendant problems. Topics included: Manhattan Project, decision to use the bomb, legislation, AEC, arms race, testing, fallout, civil defense, disarmament efforts, reactors, atoms for peace, foreign programs, espionage.

105Q • Special Studies in Atomic Age Problems (4) Badash
Prerequisites: Recommended 105 or 106C. A reading and discussion course on the relationship between science, technology and society. Topics, one each year, will include effect of military research on science, scientific advice to government, science and social responsibility, politics of science, technology assessment.

106A • The Origins of Western Physical Science, Antiquity—1600 (4) Badash
The development of astronomy, physics, chemistry, and the organization of science, traced from Babylonian times through the Greek, Roman, Islamic periods, and the Middle Ages in the West, to the scientific Renaissance. Emphasis on the growth of scientific ideas.

106B • The Scientific Revolution, 1600-1875 (4) Badash
The establishment of heliocentric astronomy and mechanical philosophy by Galileo, Newton, and others, the creation of scientific societies and periodicals, the rise of chemical and electrical science, the influence of science upon the Enlightenment, physical science survey in 18th and 19th centuries.

106C • Modern Physical Science 1875—Present. (4) Badash
The Second Scientific Revolution, including the discoveries of x-rays, radioactivity, the electron, relativity, and quantum theory; the growth of atomic and nuclear physics and of quantum mechanics; aspects of astronomy, chemistry, Nazi science, scholars' migration, and discovery of nuclear fission.

108A—B • Comparative History of the Americas (4,4) Dutra
108A • A comparative study of expansion, race relations, society, culture, economy, religion and government in the Western Hemisphere, 1492-1808.
108B • A comparative study of revolution, reform, reaction, minorities, economic growth, imperialism, government, and intellectual developments in the Western Hemisphere, 19th and 20th centuries. Lower Division students welcome.

110 • Ancient Near East (4) Haddad
Study of Near Eastern civilizations from the Stone Age to the end of the Persian empire. Political history and cultural contributions of the Sumerians, Assyro-Babylonians, Egyptians, Hittites, Canaanites, Hebrews, Aramaeans and Persians.

111A—B • History of Greece (4,4) Frost
111A • From Neolithic times to Alexander the Great.
111B • From the death of Alexander to the reign of Justinian.

112 • The Ancient Aegean. (4) Frost
Prerequisite: Upper Division standing or instructor's consent. Pre-history and archaeology of the early Aegean littoral, from Mycenae to the Lyric Age.

113A—B • Roman History (4,4) Drake
113A • From Neolithic times to the fall of the Republic.
113B • The Roman Empire.

113Q • Special Studies in Roman History. (4) Drake
Prerequisite: History/113A—B or consent of instructor.

115 • The Fall of Rome and the Birth of Europe, 300-1050 (4) Hollister
Prerequisite: History/4A—B—C, or equivalent. The political, economic, and cultural evolution of Europe from the time of Constantine to the mid-eleventh century.

115Q • Special Studies in Medieval European History (1-4) Hollister
Prerequisites: History/115 or 116 or consent of instructor. Study of specified topics in medieval European history. A research paper will be required. May be taken more than once.

116 • The Civilization of the High Middle Ages, 1050-1350 (4) Hollister
Prerequisite: History/4A—B—C, or equivalent. European civilization during the High Middle Ages. The struggle between Church and State, the rise of feudal monarchies, the revival of commerce, and the flowering of medieval culture.

117A—B • Thought and Letters in Medieval Europe (4,4) Reitzel
Prerequisites: Hist/4A—B. A topical study of several aspects of medieval thought with emphasis on the discussion of selected readings. The first quarter of the course will end with the humanistic revival of the twelfth century; the second, with the concilial experiment of the fifteenth century.

117Q • Special Studies in Medieval Culture (4) Reitzel
Prerequisites: Either 117A or B or Philosophy/20B or Rel St/187 or consent of instructor. A study of more specialized aspects of medieval cultural and intellectual history in which students select topics for individual research.

118 • Varieties of Utopianism and Social Reform from Joachim of Fiore to Karl Marx. (4) Friesen
Prerequisite: History/4A—B—C. A study of the varieties of utopian thought from Joachim of Fiore (1200) to Karl Marx (1848) and the relevance of this thought to social reform.

119 • The Medieval Town and Countryeide (4) Reitzel
Prerequisite: History/4A—B or equivalent. A study of the economic and social transformations of Western Europe from the decline of imperial Rome to the Renaissance. Topics included are agrarian techniques, the character of medieval town life, the increasing importance of a money economy, and the conditions of social change.

120A—B • Renaissance-Reformation (4,4) Friesen
Prerequisite: History/4A—4B—4C, or equivalent. The political, economic, and cultural evolution of Europe, 1300-1648.

120A(S)—120B(S) • Renaissance-Reformation (1,1) Friesen
Prerequisite: concurrent enrollment in History 120/A—B. A weekly, one-hour section, open to any students who would like to supplement the material of the lecture course with additional readings and discussion. Such students will receive one unit for the discussion section, 120S, or a total of five units for History 120 per quarter.

121A—B—C • History of Europe in Seventeenth and Eighteenth Centuries (4,4,4) Sonnino

121A • 1600-1715, political, social, economic, diplomatic, intellectual history in comparative and national contexts.

121B • 1715-1789, the crisis of the old regimes, the Enlightenment.

121C • 1789-1815, French Revolution and Napoleon.

122A—B—C • History of Europe from the Eve of the French Revolution to 1919 (4,4,4) Remak
Prerequisite: History/4A—B—C or equivalent. A political, economic, cultural, and diplomatic history of Europe from the Enlightenment to the end of the First World War.

123A—B • History of Europe in the Nineteenth and Twentieth Centuries (4,4)
Prerequisite: History/4A—B—C, or equivalent. History/123A is prerequisite to History/123B. European civilization in the nineteenth and twentieth centuries; inter-relationship of the centuries and of Europe to the world.

123Q • George Orwell's Europe, 1920-1950 (4) Talbott
Prerequisites: History/4C or consent of instructor. A study of the author of *1984* and his writings on urban poverty, popular culture, the Great Depression, imperialism, the Spanish Civil War, totalitarianism. Limited enrollment.

124A—B—C • History of Southeast Europe (the Balkans) in the 19th and 20th centuries (4,4,4) Djordjevic
Historical development of Balkan peoples (Yugoslavs, Romanians, Bugarians, Greeks, Albanians, Turks) in the Ottoman Empire, their struggle for independence, economic, social, cultural and political development of modern Balkan states.

125A—B • Scientific ideas and ethical thought in the modern world (4,4) Marsak
Prerequisite: A general knowledge of modern European history. Intellectual history of modern Europe from Francis Bacon to the present.

125Q • Special studies in contemporary thought (4) Marsak
Prerequisites: History/125A or 125B. A colloquium limited in enrollment to fifteen students.

126A • European Intellectual & Cultural History in the 19th Century (4) Alexander
Prerequisite: A general knowledge of modern European history. A study of European thought and its relation to the contemporary society during the nineteenth century.

126B • European Intellectual & Cultural History in the 20th Century (4) Alexander.
Prerequisite: A general knowledge of modern European history. A study of European thought and its relation to the contemporary society during the twentieth century.

126F—G • Woman in European History and Culture (4,4) Alexander
Prerequisites: History/4A—B—C or equivalent; general knowledge of European history. An analysis of the social, cultural and political predicament of woman and the women's movements in Europe, from Antiquity to the present. The coure is based largely on primary sources. First part ends at 1815.

126Q • Colloquium in intellectual and cultural History of Europe in the 19th & 20th Centuries (4) Alexander
Prerequisite: Admission by consent of instructor. Enrollment limited to 12 students. A discussion of special topics in modern European thought and culture, with emphasis varying each year.

127A—B • History of European Socialism, 19th & 20th Centuries (4,4) Lindemann
Special emphasis on Marxism, its origins and competitors; the relationship of Leninism to orthodox Marxism; the development of Stalinist Communism; the deterioration of socialist ideology as a political force.

127Q • Studies in the History of European Socialism (4) Lindemann
A seminar course designed to explore in depth some of the central historical questions arising in 127A—B. Weekly discussions and a research paper required.

128A—B • Twentieth Century Europe (4,4) Remak
A political, economic, cultural and diplomatic history of Europe from the First World War to the present.

128L • European Diplomacy since 1856 (4) Limoli
Survey of European diplomacy from Crimean War to present. Stress on destruction of old European state system and resulting age of international insecurity. Much attention given to influence of domestic developments on foreign policies of the European powers, to the great practitioners of European diplomacy, such as Palmerston, Cavour, and Bismarck, and to the diplomacy and policies of the twentieth century dictators — Hitler, Mussolini, and Stalin.

128Q • Special Studies in 20th Century Europe (4) Remak
Prerequisite: History/128A—B; permission of instructor. Special topics in European history from World War I to present.

129A—B—C • Europe in the 17th Century (4,4,4) Sonnino
Prerequisite: History/4A—B—C. Economic, social, political and intellectual history of the 17th century. Students who have taken History/129A—B may take the third quarter as History/129Q and petition to have the course accepted in lieu of History/195.

129Q • Europe in the 17th Century (4) Sonnino
Offered simultaneously with History/129C. Students may petition to have this course approved as a substitute for the required History/195.

131 • Europe since Hitler (1945 to present) (4) Talbott
The recovery of Europe from the ruins of World War II and its formation into an economic bloc challenging the industrial supremacy of the United States. The Cold War and the impact of revolutionary change on politics and society.

134A—B • Russian Intellectual History (4,4)
Prerequisite: History/4A—B—C.
134A • From the introduction of Christianity to the mid-nineteenth century.
134B • From the mid-nineteenth century to the present.

135A • History of Russia: Origins to 1800 (4) McClelland

135B • History of Russia: 1800 to 1917 (4) McClelland

135C • History of Russia: 1917 to present (4) McClelland

135Q • Problems in the History of the Russian Revolution (4) McClelland
Prerequisite: History/135C or consent of instructor. A study of the various aspects and various interpretations of the Russian Revolution, 1917-1921. A consideration of the questions concerning the nature of historical inquiry in general. Students will write papers based on investigation of topics of their own choosing. This course will satisfy the History/195 requirement for majors. Enrollment limited to 15 students.

137 • France since 1870 (4) Talbott
Transformation of a tradition-bound rural society into a leading industrial power, from the Paris Commune of 1871 through the Student Revolt of 1968. Impact of two world wars and decolonization. The search for political stability.

137Q • France in the Twentieth Century (4) Talbott
Enrollment limited to 15 students. Will examine the extent to which French society and politics have undergone a revolutionary transformation since the Second World War (1945 to present).

140A—B • Early Modern Britain (4,4) McGee

A history of England from the late Middle Ages to the 18th Century.

140A(S)—B(S) • Early Modern Britain (1,1) McGee
Prerequisite: Concurrent enrollment in History 140A—B. A weekly, one-hour section, open to any students who would like to supplement the material of the lecture course with additional readings and discussion. Such students will receive one unit for the discussion section, 140S, or a total of five units for History/140 per quarter.

140Q • Studies in Early Modern British History (4) McGee
Prerequisite: History/140 or consent of the instructor. A writing seminar in which emphasis is placed upon the use of primary sources. Limited to twelve students.

141A—B • History of Britain in the 19th and 20th Centuries (4,4) Gollin

143 • The Nile Quest (4) Collins
An examination of African and Victorian societies during the half century in which English explorers sought the source of the Nile. The greatest geographical puzzle of the nineteenth century, the search for the source of the Nile, opened Africa to European partition, imperialism and modernization.

144 • Imperialism and Resistance in Africa (4) Collins
An examination of African resistance to European encroachment and colonialism in tropical Africa.

145A—B • The Middle East in the Middle Ages (4,4) Haddad
Prerequisite: History/4A—B—C or equivalent. The Christian and Muslim world 395—1453, including a study of the history and civilization of the Islamic countries, and the neighboring Byzantine Empire.

146A—B • History of the Middle East in the 19th and 20th Centuries (4,4) Haddad
The Ottoman Empire and the Eastern Question. Reform movements, cultural and national awakening, and the impact of the West in Iran, Turkey and the Arab countries. Evolution of the Middle Eastern states until the present time.

147 • Modern African History (4) Johnson
This is a basic survey course on modern African history in the 19th and 20th centuries. Tropical Africa will be emphasized, and North Africa and South Africa considered only marginally.

147Q • Special studies in Africa: Modern African Intellectual History (4) Johnson
Prerequisite: Limited enrollment, apply to instructor. Reading knowledge of French recommended but not required. Discussion of topics and books on modern African intellectual and cultural history.

148Q • In Search of personal and family History (4) Johnson
How to collect, analyze, and write personal history within the student's own family or community. Methods of collecting information from written, oral, and visual materials will be studied, and students will write a biography (term paper) on some member of their family or a surrogate family.

149 • West African History (4) Johnson
Prerequisite: Some familiarity with African subject matter suggested. Political and cultural leaders of West Africa. Interpretive studies of modern West African political and intellectual leaders with emphasis on resistance to colonial rule, drive for self-government, renaissance of neo-African culture, neo-colonialism, and continuing revolution.

150A—B • Spain and Spanish Empire (4,4) Powell
Prerequisite: Upper Division standing or permission of instructor.

150A • Medieval Spain, to 1516.

150B • From 1516 to the present.

151A—B—C • Hispanic-American History (4,4,4) Dutra, Powell

151A • Colonial background and the winning of independence.

151B • Struggle toward nationality, cultural developments, and international relations of the Hispanic-American countries during the nineteenth century.

151C • History of the Hispanic-American nations during the twentieth century.

152B • Intellectual History of Spanish America: Modern Period (4) Chavarria
Prerequisite: History/8A—B—C recommended. Focuses on the impact of intellectuals and ideas — liberalism, romanticism, positivism, socialism — on Spanish American society in 19th and 20th centuries.

152GHI • Social History of IndoAmerica, 1450 to the Present (4,4,4) Chavarria
A survey social history of IndoAmerica — most commonly known as Spanish America — with a particular emphasis on the social effects (economic, political, cultural) of the colonizing process that succeeds the Hispanic Conquest, and which continues to the present. The first part covers the period up to the late 18th century; the second concentrates on the nineteenth; and the third on the Twentieth Century. Survey focuses on potentialities of Indo America for social change with discussion on agrarian social structure, race and class relations, problem of slow industrial development, imperialism, the problem of IndoAmerican culture, and a variety of social movements.

153 • Comparative Seaborne Empires, 1415-1825 (4) Dutra
Analysis of the similarities and differences between the overseas activities of Portugal, Spain, France, England, and the United Provinces of the Netherlands.

154A—B • Portugal Overseas (4,4) Dutra

154A • A comparative analysis of Portuguese activity in Africa, Asia, and America, 1415-1825.

154B • The Portuguese in Africa and Asia, 1826 to the present.

155A—B • History of Portugal (4,4) Dutra

155A • A general survey of Portugal from its origins to 1580 with an emphasis on social, economic, and cultural history.

155B • Modern Portugal. 1580 to the present.

156A—B • History of Mexico (4,4) Powell
Prerequisite: Upper Division standing or *permConquest to the end of the eighteenth century.*

156B • The nineteenth and twentieth centuries.

157A—B • History of Brazil (4,4) Dutra
A general survey of the history of Brazil in two quarters:
157A • From the discovery of the New World to the formation of the Empire.

157B • Modern Brazil.

157C • Intellectual History of Brazil: Modern Period (4) Dutra
Focuses on the impact of intellectuals and ideas on Brazilian society in the 19th and 20th centuries.

158A—B • History of Inter-American Relations (4,4)
Prerequisite: History/8A—B—C or Upper Division standing.

158A • History of relations between and among the American nations from independence to 1900.

158B • History of inter-American relations and the Pan-American movement since 1900.

159A—B • History of American Women (4,4) Weiderrecht
Investigation of the position and role of women during different periods of American history.

159A • From the colonial period to the 1870's.

159B • From the 1870's to the present.

159Q • Special studies in Women's History (4) Wiederrecht
Prerequisite: History/159 or consent of instructor. The study of special topics in the history of women in the United States.

160A • The American South to 1865 (4) Harris
The origins and development of distinctive economic, social, political, and cultural patterns in the ante-bellum South.

160B • The American South, 1865 to the present (4) Harris
Change and resistance to change in Southern economic, social, political, and cultural life since the Civil War.

161 • Colonial and Revolutionary America, the Frontier, Indians, Mexican Americans, Afro-Americans, and Euopeans (4) Jacobs
Stress is on the political, cultural, and socio-economic history of the thirteen colonies; their neighbors; the colonial heritage of Mexican American, Indian and black peoples; frontier expansion into wilderness lands; and the American Revolution.

162A—B • The United States: The New Nation. (4,4) Borden
Prerequisite: History/17A—B an equivalent course, or consent of the instructor. History of the United States from the close of the American Revolution to the Era of Good Feelings, with emphasis on the creation of a federal government, the rise of political parties, and the emergence of national character.

162M—162N • Speculations on American History (4,4) Borden, Graham
Prerquisites: History/17A for 162M; History/17B for 162 N. An adventure in hypothetical history covering specific events which might have altered the course of American history. Comparisons between what did and what could have been. History/162M, to the Civil War; History/162N, Civil War to present.

163CDE • American Constitutional History (4,4,4) Paul
C • Foundations and Development to 1865.
D • From the Civil War to World War II.
E • The Constitution in the Modern Age.

163F • Family, Sex, and the Law: Twentieth Century Trends (4) Paul
Changing American patterns in the law of marriage, divorce, care of children, and sexual freedom. The interrelationships of these developments, legal and social, will be stressed.

163G • Great Lawmakers in American History: Judges, Lawyers, and Other People (4) Paul
A biographical approach to constitutional and legal history. The contributions to American law of selected jurists, lawyers, political leaders, and citizen activists, examined in historical context.

164A • Comparative Slave Societies (4) Bonadio

164C • Civil War and Reconstruction (4) Bonadio
Prerequisite: Hist/17A—B, an equivalent course, or consent of Instructor. A history of the United States during the second half of the 19th century. Emphasis is placed on the causes of the Civil War, the outstanding developments of the war itself, and the major consequences of the reconstruction period.

164D • History of the Inarticulate (4) Bonadio
A reconstruction of the personal life of the American people in pre-industrial society, with special emphasis on social survival and individual discipline.

164I • The Italians: The Italian Experience in America (4) Bonadio
The Italians: The Italian-American Experience: a social history of a people, Italian-Americans, focusing primarily on the twentieth century.

165 • America in the Gilded Age, 1876-1900 (4) Harris
The responses of American people and institutions to the opportunities and problems cf industrialization and rapid social change in the late nineteenth century.

166A—B • Recent History of the United States (4,4) Graham
Prerequisite: History/17A—B, an equivalent course, or consent of the instructor. Political, economic, and social development of the United States from 1900 to the present time.

166Q • Special Studies in 20th Century History (4) Graham
Prerequisite: Consent of the Instructor. A seminar for students who have completed History/166A—B and who wish to pursue independent inquiry into some aspect of 20th century American history.

167A • Rise of the American Marketplace (4) Brownlee
American economic development to the Civil War, including the dynamics of European colonial expansion, the impact of mercantilism and the Revolution, the growth and redistribution of population, and the sources of early industrialization.

167B • Development of American Industrial Society, 1860—present (4) Brownlee
Economic and social history of the United States associated with the continuing industrial transformation of the nation, emphasizing a dynamic population and the changing organizational basis of industrial society, including the development of the modern corporation and the welfare state.

167C • History of American Laobr (4) Brownlee
An economic and social history of American labor, 1607-present, treating patterns of economic and social opportunity, the structure and composition of the labor force (including the role of ethnic and racial minorities, women, and children), and the character of organized labor movements.

169A—B • History of the Afro-American (4,4) Poe
The Negro in United States history, from the era of colonization to the present. Stress will be placed on the reciprocal relation of the Negro and the American social order.

169M • History of Afro-American Thought (4) Poe
Study of the development of Afro-American thought from the 1860's to the 1960's as reflected in intellectual and popular media.

169Q • Selected Studies in Afro-American History (4) Poe
Prerequisite: History/169A and B, or consent of instructor. Studies of selected themes in nineteenth and twentieth century Afro-American history, such as, the Afro-American response to national reform movements. A reading and discussion course with limited enrollment.

170JK • The American Nation (4,4) Kelley and Staff
A narrative history of the emergence and growth of the American nation, from colonial times to the present, concentrating upon the great political controversies which in each period have shaped its institutions, the relations between its various ethnic and social groups, and its role in the world community.

171A—B • History of the Foreign Relations of the United States (4,4) DeConde
Prerequisite: History/17A—B, an equivalent course, or consent of the instructor.

171A • The theory and practice of American foreign policy from colonial times to 1900.

171B • Analysis of twentieth-century developments. Emphasis on broad policy, concepts and ideas.

172AL—172BL • The American Intellectual in the 20th Century (4,4) Kelley
Emergence and role of the intellectual as a social type in modern American culture; relations to national power; anti-intellectualism; the institutional settings within which intellectual life takes place; comparison with intellectual elites abroad, and growing world influence as century proceeds. The ideas and work of major thinkers in each period. Forms year-sequence with History/72.

172QL • American Intellectual Life in the 1960s (4) Kelley
Prerequisite: Consent of instructor. A reading and research seminar, limited in size to ten students, resulting in the writing of a research paper.

173A—B • American Social & Intellectual History (4,4) Nash
Prerequisite: History/17A—B, an equivalent course, or consent of instructor.

173A • Traces the origins, influence, and modification of ideas, attitudes, and social institutions through the Civil War. Focuses on the perfectionist impulse, religion, the nature of slavery, implications of democracy, and the development of American nationalism.

173B • Emphasizes Darwinism, social Darwinism, pragmatism, socialism, and the effect of industrialization, urbanization, and the First World War on American thought. Special attention to social problems and intellectual currents since 1945.

173C • American Environmental History (4) Nash
Traces three centuries of changing American attitude toward the natural environment with an emphasis on the rise of the conservation movement.

173S • American Popular Cultural History (4) Nash
Traces the origins and development of popular culture in modern industrial America, 1860 to the present. Emphasis is on the ideas, attitudes and values reflected in mass entertainment media such as popular literature, motion pictures, radio, television and popular music.

173T • Wilderness and Man: History, Meaning, and Management (4) Nash
The significance of wilderness in world history with an emphasis on man's relation to it both aesthetically and economically. The perspective will be international, although the American experience is the central concern. Special attention to the problems of preserving wilderness in modern civilization and to the future of wild country. Case studies and audiovisual techniques will be an important part of the course as will a wilderness field trip.

174A—B • The Machine in America (4,4) Pursell
Social history of devices and techniques, from handicraft through mass-production to automation; invention, innovation, scientific research, and organization in such areas as agriculture, manufactures, transportation, warfare, and the urban environment.

174C • Social History of American Science (4) Pursell
The social role of science and scientists in America from the Puritans to the present. Emphasis on social behavior, institutions, public policy and the interrelations of the scientific culture with the larger American context.

174D • History of the Military-Industrial Complex (4) Pursell
The history of American business, the military profession, and their relations with civilian government from the Early Republic to the present.

174Q • Studies in the History of American Technology (4) Pursell
Prerequisite: History/174A—B, or permission of instructor. A reading and discussion course, with a limited enrollment.

175A—B—C • American Cultural History (4,4,4) Kirker
The origin and development of a national character and culture since 1607; emphasis is upon the use of artifactual evidence, such as architecture, painting, and literature, in formulating historical interpretations regarding the American character and culture.

176A—B • The American West (4,4) Oglesby
Prerequisite: History/17A—B, an equivalent course, or consent of the instructor. The West as a frontier and as a region, in transit from the Atlantic seaboard to the Pacific, and from the seventeenth century to the present.

177 • History of California (4) Oglesby
California as a case study of national trends, and as an unique setting with its special problems and culture.

177Q • Special Studies in California History (4) Oglesby
Prerequisites: History/177 or consent of instructor. A reading and discussion course limited in enrollment. A research paper will be required.

178A—B • American Urban History (4,4) Callow
Prerequisite: History/17A—B, an equivalent course, or consent of instructor. A study of the political, economic, social, and intellectual impact of the city upon American history, and the impact of history upon the growth of American urbanization.

178K • Special Studies in the History of Crime in the Cities of the United States (4) Callow
A reading, discussion, and research course in the history of organized and unorganized crime in the American city. Limited to ten students.

178M • History of American Urban Crime (4) Callow
History of the evolution of American urban crime, organized and unorganized, with attention to the roles played by urbanization, the gang, the police, the courts, the political boss and his machine.

178Q • Studies in American Urban History (4) Callow
Prerequisite: History/178A—B or consent of the instructor. A reading and discussion course limited in size to ten students.

179Q • The Native American Indian and the Frontier: Ideas and Interpretations (4) Jacobs
The role of the American Indian in United States history. A study of historical thought and interpretation concerning main currents of national development and the origins of American attitudes and policies toward America's native people. A reading and discussion course.

180 • Southeast Asian History (4) Hay

A survey of the history of the countries of Southeast Asia (Burma, Thailand, Malaysia, Vietnam, Indonesia, the Philippines, Cambodia, and Laos). A research paper will be required. Not for pass-fail students.

181 • India in the 19th and 20th Centuries (4) Hay
An overview of developments in the Indian subcontinent in the past two centuries, with emphasis on Gandhi's antecedents, role and successors.

183 • Gandhi (4) Hay
The primary purpose of the course is to understand the various phases of Gandhi's work and ideas as they developed in successive historical contexts. The significance of his ethical, political, and religious ideas and disciplines will be emphasized. Students may write a research paper based on primary source materials on a topic of their own choosing, communicating the results to the class.

184 • History of Chinese Thought (4) Chen
A study of the development of Chinese thought from Confucius to Mao Tse-tung.

185A—B • Modern China (4,4) Hsu

185A • From 1600 to 1900.

185B • From 1900 to date.

186A—B—C • History of China (4,4,4) Chen

186A • Ancient China, to A.D. 200.

186B • Medieval China, A.D. 200-1000.

186C • Early Modern China, A.D. 1000-1600.

187A—B • History of Japan (4,4) Lamberti
A survey of Japan from its origins to the present. Political, social and cultural history.

188A—B • Japan: Tradition and Modernization (4,4) Lamberti
Prerequisite: History/187A—B or instructor's permission. Analysis of the role of traditional Japanese institutions and values in the process of modernization. Emphasis on social rather than political trends. 188A is prerequisite to 188B.

190 • Problems in Chinese History (4) Chen
Studies on selected topics of traditional China.

192 • Truth and Fiction: a Century of German History in Literature (4) Remak, Exner
Prerequisite: Upper Division course in modern Europe or in German literature. German history, 1870-1971, as reflected in German literature. (Tentative list of authors to be read: Fontane, Grillparzer, George, Hofmannsthal, Roth, Plievier, Brecht, Hochhuth, Johnson.)

195E—AM—LA—AS—AF • The Methods of History (4) The Staff
Prerequisite: Upper Division major in history or consent of the instructor.
E • Europe; AM • America; LA • Latin America; AS • Asia; AF • Africa. Required of all history majors, but may be waived for students who have taken Q courses requiring a major paper. (Q course instructors petition to have the 195 requirement waived for students in their courses.) A research seminar which trains the students in historical research methods. The seminar will generally concentrate in the area of the instructor's main field of interest and a research paper will be written. May be taken more than once.

***199 • Independent Studies** (1-5) The Staff
Student must have completed 125 units with 3.0 grade point average, and must be a major in history or present justification to both the instructor and the department for diverting from this norm. A maximum of 12 units will be allowed during the undergraduate course of study. The description of any one 199 must not be identical to any existing course description.

Graduate courses

The following are one-quarter seminars:

200E—AM—LA—AS—AF • Historical Literature (4) Staff
E • Europe; AM • America; LA • Latin America; AS • Asia; AF • Africa. A reading course in a general field of history, within which the professor's specialization lies. Introduces the student to the sources and general literature of the field in question. Particularly designed to meet the needs of M.A. candidates as well as those Ph.D. candidates seeking broad preparation. Written work as prescribed by the instructor. May be taken more than once.

201E—AM—LA—AS—AF • Advanced Historical Literature (4) Staff
E • Europe; AM • America; LA • Latin America; AS • Asia; AF • Africa. A reading course in a field of the professor's specialty. Introduces the student to the sources and literature of the field in question. Written work as prescribed by the instructor. May be taken more than once. Open to both M.A. and Ph.D. candidates.

202 • European Historiography (4)
The nature of history and historical writing as revealed by the major historians of European civilization since the Greeks.

203 • Research Seminar in American Historiography (4) Jacobs
Emphasis is on the writings of the great chroniclers of American history. One research paper is prepared.

207 • Historical Methods and the Social Sciences (4) Brownlee, Harris
Exploration of the application of social science theory and methodology, including quantitative analysis, to the historical study of social structure and mobility, demographic change, distribution of political power, voting behavior, legislative behavior, interaction of public policy and economic development and distribution of income and wealth. This is a one quarter course.

231 • Seminar in Modern French History (4)

244 • Seminar in Ancient Near East & Intellectual History (4)
Prerequisite: Reading knowledge of French or German. Problems in the development of man's intellectual response to his environment in the Ancient Near East. This is a one-quarter seminar.

246 • Seminar in the Modern History of the Middle East (4) Haddad
Prerequisite: History/146A or 146B. Research seminar stressing the movements of nationalism, revolution and change that have characterized the modern history of the Middle East since 1850.

259 • Seminar in Recent Hispanic-American History (4)

277 • Topics in the History of Science (4) Badash
Research seminar selected from such topics as Babylonian astronomy, Greek science, Age of Newton, rise of modern physics, scientific instruments, nationalism/internationalism in science, science and society, sociology of science, public conceptions of science, organization and profession of science.

278 • Science In Twentieth Century America (4) Badash
The atomic age — the background to the atomic bomb, its development, use, and postwar problems.

281 • Politics and Culture in the Gandhian Era (4) Hay.
Prerequisite: History/181A—B. A research seminar devoted to the period 1919-1948 in the history of India and Pakistan.

284 • Seminar in the History of Chinese Thought (4) Chen
Prerequisite: History/19A, or 186A—B, or permission of instructor. Selected studies of leading thinkers on important schools of thought. This is a one-quarter course.

286 • Seminar in Pre-Modern Chinese History (4) Chen
Prerequisites: History 86, or 87, or 186/A—B—C, or consent of instructor. Research on special topics of ancient, medieval or early modern China.

288 • Seminar in the Modernization of Japan (4) Lamberti
A research seminar in the important aspects of modern Japanese history. This is a one-quarter course.

295 • The Art of Teaching History (2) Staff
Prerequisites: Graduate standing — admission to Ph.D. program of M.A. destined for post secondary teaching. A seminar course on the art and methods of teaching history including practical experience in the classroom. Audiovisual aids will be used in evaluating teaching techniques. Graduate students who wish to become teaching assistants are strongly advised to take this course.

The following are two-quarter seminars.

204 • Historiography and Philosophy of History (4,4) Marsak
The nature of history and historical writing as revealed by major European and American historians followed by a consideration of theories of historical inquiry — metaphysics, methodology, meaning and morality of history.

205 • Research Seminar in Comparative History (8) Kelley
Study and use of new methodologies in comparative history. Students will prepare research papers in fields appropriate to their competence.

208 • Problems of Historical Preservation (8) Jacobs
Prerequisites: Graduate standing. Selected undergraduates admitted. Problems of historical preservation using archives, museums, and historic sites and buildings of the Santa Barbara area as a laboratory. The first quarter is field work and the second is research and writing.

211 • Seminar in Greek History (8) Frost
Prerequisite: Reading knowledge of French, German or Italian. Research seminar in Greek history, From time to time the seminar will be limited to candidates specializing in ancient history, and with a reading knowledge of Classical Greek.

213 • Seminar in Roman History (8) Drake
Prerequisite: Reading knowledge of appropriate foreign language. Selected topics in the history of the Roman Republic and Empire, with particular emphasis on problems of the Later Roman Empire.

215 • Seminar in Medieval History (8) Hollister
Prerequisite: History/116 • Medieval Europe, 1050—1350.

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*See L-2 for 198/199 independent studies unit limitations.

220 • Seminar in Renaissance-Reformation (8) Friesen
Prerequisite: Reading knowledge of one Western European language besides English. Research seminar, stressing problems in comparative European Social and intellectual history, 1450—1650.

222 • Seminar in 18th Century European History (8)
Prerequisite: Graduate standing or permission of professor. Selected topics in the history of Europe, 1715—1815.

223 • Seminar in Modern European History (8) Remak
Prerequisite: Graduate standing. May be taken more than once.

225 • Topics in the European Enlightenment (8) Marsak
Prerequisites: A reading knowledge of at least one foreign language. Science and social philosophy, 1650—1850.

226 • French Intellectual History (8) Marsak
Prerequisite: History/201. The idea of reason in 17th century France.

227 • Research Seminar in European Socialism, 19th and 20th Centuries (8) Lindemann

229 • Seminar in 17th Century European History (8) Sonnino

235 • Seminar in Russian History (8) McClelland
Prerequisite: Reading knowledge of Russian, German or French, or consent of the instructor.

235 • Seminar in Southeast European History (8) Djordjevic

237 • Seminar in Modern German History (8) Remak

240 • Seminar in Tudor-Stuart History (8) Gollin
Research seminar.

242 • Seminar in Early 20th Century British History (8)

248 • Research Seminar in African History (8) Collins
Prerequisite: History/201. History/248 is designed to provide the graduate student with the opportunity to explore in depth one or more of the subjects with which he has become acquainted in History/201.

250 • Seminar in Spain and Spanish Empire (8) Powell
Prerequisites: Graduate standing or permission of professor; reading knowledge of Spanish.

252 • Seminar in Social and Intellectual History of Modern Latin America (8) Chavarria
Prerequisites: History/201; History/151B—C, History/152B or permission of instructor. Seminar on nationalism in Latin America.

254 • Latin America, Spain and Portugal (8) Powell, Dutra
Prerequisites: Reading knowledge of Spanish or Portuguese required(in special cases, French, German, Dutch, or Italian acceptable). Individual reading, research, and writing in the history of Spain, Portugal, and their Empires in The Americas, Africa, and Asia. For Brazil and Mexico, national periods included.

256 • Seminar in Mexican History (8) Powell
Prerequisites: Graduate standing or permission of professor; reading knowledge of Spanish.

257 • Seminar in Luso-Brazilian History (8) Dutra
Research seminar with particular stress on Portuguese, Spanish and Brazilian archival materials. Course will provide the graduate student with opportunity to analyze problems in the history of Portugal and her overseas empire with special emphasis on Brazil.

260 • Seminar in American South (8) Harris
Research in 19th and 20th century Southern history.

261 • Seminar in Colonial America, the Frontier, and the Indian (8) Jacobs

262 • Seminar in Early National Period of United States History (8) Borden

264 • Seminar in Civil War and Reconstruction (8) Bonadio

265 • Seminar in American Political and Social History (8) Harris
Research in selected historical problems, focusing on analysis of political behavior, social structure, and social mobility.

266 • Seminar in Recent History of the United States (8) Graham

267 • Seminar in American Economic History (8) Brownlee

269 • Seminar in American Urban History (8) Callow

271 • Seminar in Diplomatic and Political History of the United States (8) De Conde

272S • The American Intellectual in the 20th Century (8) Kelley
Forms the graduate segment of a sequence of courses beginning in Lower Division: History/72 • **the Moderm American Mind**; History/**S172A—B • the American Intellectual in the 20th Century**; History/**S172Q • American Intellectual Life in the 1960's.**

273 • Research Seminar in American Social & Intellectual History (8) Nash

274 • History of Science and Technology in America (8) Pursell
Prerequisite: Consent of the instructor. Research seminar emphasizing the social aspects of selected topics in the history of science and technology in America

275 • American Cultural History (8) Kirker

276 • Seminar in American West and California (8) Oglesby

280 • Seminar in Modern China (8) Hsu
Prerequisite: History/185A—B. A research seminar in the important aspects of modern Chinese history.

285 • Seminar in United States Relations with the Far East (8) Hsu
Prerequisite: History/185A—B, or 187A—B. A research seminar, with particular stress on the use of archival materials. The role of the United States in the development of the Modern Far East is emphasized.

Reserved for advanced study and research.

596AA—596ZZ • Directed Reading and Research (2-6) Staff
Prerequisite: Graduate standing and consent of the instructor. Individual tutorial. Instructor usually students' major professor. Minimum of two units per quarter. Each faculty member has a unique letter designation, which is the same as in the 599 series.

598AA—598ZZ • Master's Thesis Research & Preparation (2-6) Staff
Prerequisite: Graduate standing and consent of the instructor. Only for research underlying the thesis, writing the thesis. Instructor should be the chairman of the student's thesis committee.

Each faculty member has an unique letter designation, which is the same as in the 599 series.

599AA—599ZZ • Ph.D. Dissertation Preparation (2-6) Staff
Prerequisite: Graduate standing and consent of the instructor. Only for writing the dissertation. Instructor should be the chairman of the student's doctoral committee. Each faculty member has an unique letter designation, as follows:

HA Henry M. Adams; MB Morton Borden: RC Robert O. Collins; AD Alexander DeConde; DD Dimitrije Djordjevic, AG Alfred M. Gollin; GH George N. Haddad; WH C. Warren Hollister; IH Immanuel C. Y. Hsu; WJ Wilbur R. Jacobs; RK Robert L. Kelley; HK Harold Kirker; LM Leonard N. Narsak; PP Philip W. Powell; JR Joachim Remak; FB F. A. Bonadio; AC Alexander B. Callow; FF Frank J. Frost: OG Otis L. Graham; SH Stephen N. Hay, RN Roderick W. Nash; RO Richard E. Oglesby; CP Carroll Pursell; PS Paul M. Sonnino; LB Lawrence Badash; EB W. Elliot Brownlee; JC Jesus Chavarria; CC Chi-Yun Chen; FD Francis A. Dutra; AF Abraham Friesen; CH Carl V. Harris; ML Matthew H. Alexander; GD George Dangerfield; JT John E. Talbott; MR Joan M. Reitzel; SM J. Sears McGee; JM James C. McClelland; HD Harold A. Drake; GJ G. Wesley Johnson; LP Lillian A. Poe.

Interdisciplinary Courses

Interdisciplinary/101 • The Animal in Primitive and Ancient Art (3) D. Davenport, Professor of Zoology
Prerequisite: Upper Division status. Lecture, one hour; seminar, 0.5 hr. A melange of natural history, anthropology, mythology and art, approaching the subject from the point of view of the naturalist. Emphasis is placed on the relation of animals to man as seen in the art of primitive non-western societies and of the west from the Paleolithic to the rise of classical humanism. This course is usually presented in the winter quarter.

Law and Society/190A—B
See listing under Law and Society major.

Medieval Studies/100
See listing under Medieval Studies major.

Various other cross-disciplinary courses are cross-listed under two or more departments. See departmental entries for descriptions:

Anthropology/Environmental Studies/129
Anthropology/Law and Society/117
Art/Environmental Studies/164G
Biology/Environmental Studies/123
Biology/Environmental Studies/155
Black Studies/Music/114A
Black Studies/Political Science/176
Chemistry/Environmental Studies/101
Chicano Studies/History/101A—B—Q
Chicano Studies/Sociology/144
Chicano Studies/Political Science/174
Electrical Engineering/Computer Science/Mathematics/Sociology/192
Environmental Studies/Physics/102
Environmental Studies/Geology/106
Environmental Studies/Mechanical Engineering/110
Environmental Studies/Sociology/121
Environmental Studies/Geography/135
Environmental Studies/English/141
Environmental Studies/History/173T
Environmental Studies/Political Science/190C
Film Studies/Colloquium/133
French/Music/188
French/Sociology/181X
German/Music/187
German/History/192
Philosophy/Religious Studies/114
Political Science/Sociology/118
Religious Studies/Sociology/156

Law and Society

Committee in Charge*

Glen E. Mills, Ph.D., Professor of Speech.
C. Herman Pritchett, Ph.D., Professor of Political Science.
Burleigh T. Wilkins, Ph.D., Professor of Philosophy.
Thomas S. Schrock, Ph.D., Associate Professor of Political Science (Chairman of the Committee).
Harold L. Votey, Jr., Ph.D., Associate Professor of Economics.
James P. Vanyo, Ph.D., Assistant Professor of Mechanical Engineering.

Concerns of the department

The Law and Society major affords the student an opportunity to study the law and legal institutions from the perspective of several disciplines. It is an interdisciplinary program drawing its courses from existing offerings in law and legally related topics from the major sponsoring departments of Political Science, Sociology and Philosophy, as well as optional electives from the departments of Anthropology, Economics, Environmental Studies and Mechanical Engineering.

The program is structured to permit the emphasis of one or more of the fields represented by the sponsoring departments. Students may follow a general program, or they may choose to do additional studies in political science, sociology or philosophy.

The major is designed to benefit both the student who desires a liberal education with an unique area of emphasis and the student who may intend to enter graduate or law school.

Bachelor of Arts

Preparation for the major

Required: Philosophy/1 or 5; Political Science/5 and 10, or 12 or 100: Sociology/1 or 101; History/4A—B—C; Law and Society/1.

Upper Division major

Required: 40 Upper Division units, including the following specified courses:

Group A: Sociology/173 and either Sociology/172 or 174 or 175.
Group B: Philosophy/192 and either Philosophy/104 or 121 or 193.
Group C: Political Science/115 and either Political Science/117, or

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*See departmental entries for faculty information.

125 or 165 or 166 or 167.

Group D: Law and Society/190A—B.

Eight units of Upper Division law and society electives are to be chosen with the approval of a Faculty Adviser. These may be additional courses from groups A, B, or C, or may be selected from one of the following: Anthropology/115, Economics/160, Environmental Studies/125, Mechanical Engineering/180, Speech/159, Political Science/190J, Law and Society/100.

Teaching credentials

Students who complete a major in Law and Society may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Consult with designated counselors in the Department of Law and Society for any special requirements in this field.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Career opportunities

A number of careers and professional programs are open to Law and Society majors. Programs open to the student range from graduate study in the social sciences to specific professional degree programs such as judicial administration and management, paraprofessional legal training and law school. Graduates of the major have gone into careers ranging from urban planning, court management, probation and counseling, legal practice, to federal and state government service and graduate study.

Correspondence information

Program Coordinator, Law and Society Major, University of California Santa Barbara, Santa Barbara, California 93106 Phone: (805) 961-3431

Law and Society

Lower Division courses

1 • Introduction to Law & Society (3) Welsh
An introduction to the interdisciplinary study of the law. Preparation for and introduction to the Law & Society Major. Introduction to the issues, principles and approaches involved in future studies in an interdisciplinary program. The course is a prerequisite for study in the major.

Upper Division courses

100 • American Law (4) Staff
An introduction to the basic principles and approaches of some of the major substantive areas of American law and practice. Topics covered will include: Civil and criminal procedure; Torts; Contract law.

190A—B • Senior Seminar in Law and Society (4,4) Hanson, Welsh
Prerequisite: Sociology/173, Philosophy/192, Political Science/115, and advanced standing in the Law and Society Major or permission of the instructor. An intensive introduction to interdisciplinary studies in law and society for senior admitted to the major. Preparation of an extensive paper, integrating knowledge acquired in the major, will be required.

194 • Group Studies (1-4) Staff
Group studies on special topics of importance to Law and Society. The course is designed for advanced Law and Society majors.

Linguistics

Professor

[4]*Arthur Schwartz,* Ph.D., Wisconsin; specialty in syntax.

Assistant Professors

C. Douglas Johnson, Ph.D., Berkeley; specialty in phonology.
Charles N. Li, Ph.D., Berkeley; specialty in semantics.

Concerns of the department

A program in Linguistics initiated in 1967-68 offers both undergraduate and graduate level instruction. An undergraduate major is now offered and the program is presently under the direction of the Dean of the College of Letters and Science.

Linguistics focuses, principally, on the study of the structure of natural languages, and how this structure — syntactic, phonological, semantic — changes through time. From this empirical study, linguistics attempts to extract properties common to all language structure and structural change, and to develop a theory of general grammar. When linguistic structure is viewed more abstractly, it bears a relation to certain mathematical concerns, such as automata theory. The study of language with respect to its acquisition and use raises questions pertinent to areas known as socio-linguistics and psycholinguistics.

Bachelor of Arts

Preparation for the major

Linguistics/20

Upper Division major

Linguistics/110A—B, 111A—B, 112, 113A, 121, 122, 123; six-nine units from Semitic/120A—B—C, and Linguistics/120A—B.

In General Education courses, Linguistics recommends: Philosophy/108, 133; History/106A—B—C; Anthropology/101; Psychology/101, 127; Sociology/101, 136; Biology/20; Physics/8A—B—C, 10; Chemistry/1A—B—C; Mathematics/8, 9, 109, 110, 111A; Speech/117.

Graduate program

To date, there is no formal graduate program in linguistics. It is possible to work out a graduate program of interdisciplinary independent study: that is, linguistics in conjunction with another discipline, e.g., Psychology, Speech, Foreign Languages, etc.

Career opportunities

The large majority of careers in linguistics require graduate training and a fair amount of specialization. A certificate in English-as-a-Second-Language, however, can be earned with about one year's work beyond our undergraduate major.

Correspondence information

Linguistics Program, South Hall Annex, Room 5503, University of California, Santa Barbara, California 93106. Phone: (805) 961-3776.

Linguistics

Lower Division courses

20 • Language and Linguistics (4) Staff
An introduction to the field and its applications. Synchronic and diachronic linguistics: their goals and methods. Allied fields: psycholinguistics, sociolinguistics. Application of linguistics: speech production and perception; mechanical translation; information retrieval; language learning; etc.

Upper Division courses

110A—B • Introduction to Syntax (4,4) Schwartz, Li
An introduction to the description of the syntax of natural languages.

111A—B • Introduction to Phonology (4,4) Johnson
Prerequisite: Linguistics/110 recommended. Introduction to the description of the sound pattern of natural language.

112 • Introduction to Linguistic Change (4) Schwartz, Johnson.
Prerequisite: Linguistics/110 or 111, preferably both. An introduction to the historical and dialectical study of natural languages.

113A—B • Introduction to Semantics (4-4) Li
Prerequisite: Linguistics/110A or permission of instructor. Introduction to semantic description of natural language. Consideration of semantic fields, the role of logic and the underlying structure of language. Investigation of presupposition, entailment, synonmy, etc.

115 • Mathematical Backgrounds for Linguistics (4), Johnson
Deals with mathematical and logical concepts that are fundamental to the formal development of grammatical theory.

120A—B • Historical-Comparative Linguistics (4,4,4) Li
Prerequisite: Linguistics/112. An introduction to the methods of reconstruction in historical and comparative linguistics, as exemplified in one language-family.

121 • Linguistic Analysis I (5) Johnson
Prerequisite: Linguistics/110 or 111. Study of phonology of an non-IndoEuropean language.

122 • Linguistic Analysis II (5) Schwartz
Prerequisite: Linguistics/121. Study of the syntax of a non-IndoEuropean language.

123 • Linguistic Analysis III (5) Li
Prerequisite: Linguistics/122. Formulation of a grammar based on the findings of the year's work, testing the adequacy of current linguistic theory.

130 • Language and Culture (4) Schwartz.
An introduction to the study of language in its cultural setting: the effect of culture on the linguistic system, as well as the effect of the system on the culture; language in relation to cognitive categories, both universal and culture-specific; language in relation to social roles (e.g., male, female).

165 • Language Acquistion (4) Schwartz, Li
Prerequisite: Linguistics/20 or 110A. The study of how children acquire language and the problem of accounting for "deviant" linguistic behavior.

194 • Group Studies in Linguistics (2-3) Staff
Admission by special arrangement. This course may be repeated with the consent of the department. A course limited to small groups whose interest and needs will determine the central focus. The meetings — normally two-three hours each and averaging at least once a week over the quarter — are not required to be periodic. A research paper is to be submitted by each student at the end of the quarter. Enrollment normally limited to 12 or fewer students.

***199 • Independent Studies in Linguistics** (1-5) Staff
Admission by special arrangement. Intended for the study of special areas within Linguistics. 199 courses are limited to no more than five units in one quarter and not more than 12 units total.

*See L-2 for 198/199 independent studies unit limitations.

Graduate courses

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[4] Absent on Leave, 1975-76.

203 • Studies in Classical Languages (4) Staff
Prerequisite: Admission by special arrangement. The course examines aspects of the grammatical system of a classical language, (e.g., Latin, Greek, Tibetan, Chinese, Arabic, Hebrew, etc.).

205 • The Description of Language (3) Li
Prerequisite: Linguistics/110 (may be taken concomitantly with the instructor's permission). Concerns of method: induction, intuition; grammatical relatedness; linguistic primes; levels of analysis and their empirical motivation; the structure of grammar.

209 • Syntactic Theory (3) Schwartz
Prerequisite: Linguistics/110A, 110B, or permission of instructor. Consideration of special topics in the theory of syntax; alternative formalisms; current controversial aspects.

210 • Phonological Theory (3) Johnson
Prerequisite: Linguistics/111A or 111B or permission of instructor. Aspects of lexical representation; theories of rule application; distinctive feature analysis and its problems.

211 • Formal Models of Language (3) Johnson, Li
Prerequisites: Linguistics/115; and 205 or 210. The study of models of language structure and use. The focus is principally on the relation of automata to the notion 'grammar,' but some attention may be given to statistical models of production, perception, and change.

215 • Language Change (3) Li, Schwartz
Prerequisite: Linguistics/205. Language acquisition in the child; rule ordering and re-ordering; conditions for generalization; types of innovation; constraints on restructuring; lexicon vs. rule; mechanisms of 'drift.'

225 • Semantics (3) Li
Prerequisite: Recommended: Linguistics/205 and 210. Its place in grammar: relation to syntax; the question of formalism and representation; relation to pragmatics and culture.

230 • History of Linguistics (3) Schwartz
Prerequisites: Linguistics/205 and 210. The role of IE studies of the 19th century; the Prague school; American structuralism; current theories.

594AA—594ZZ • Special Topics (1-4) Staff
594PH: Special Topics in Phonology
594SX: Special Topics in Syntax
594SM: Special Topics in Semantics
Admission by special arrangement

595AA—595ZZ • Group Studies (4) Staff
595PH: Group Studies in Phonology
595SX: Group Studies in Syntax
595SM: Group Studies in Semantics
Admission by special arrangement

596AA—596ZZ • Directed Reading and Research (2-4) Staff
596PH: Directed Reading and Research in Phonology
596SX: Directed Reading and Research in Syntax
596SM: Directed Reading and Research in Semantics
Individual Tutorial.

Related course in other departments

For details, see departmental listing.

Electrical Engineering
165B • Formal and Programming Languages

English
110 • Structure of Modern English
111 • History of the English Language

French
202A—B • Old French Philology
209A—B • Linguistics

German
120 • History of the German Language
202A—B • Gothic
225 • Seminar in the History of German Grammar

Philosophy
133 • Philosophy of Language

Psychology
127 • Psychology of Language

Russian
108 • The Russian Language

Semitic
101A—B—C • The Structure of the Semitic Languages
120A—B—C • Historical Semitic Linguistics

Sociology
136 • Sociological Linguistics

Spanish
100A—B—C • The Spanish Language: A Linguistic Approach
101A—B • American Spanish
107 • Languages in Contact
121A—B • History of the Spanish Language
201A—B—C • Historical Grammar and Old Spanish Readings
209A—B—C • Dialectology

Speech
117 • Language and Human Behavior
118 • The Limits of Language
150 • Phonetics
151 • Natural Acquisition of the Phonemic System
152 • Measurement and Treatment of Language: Phonemic
153 • Natural Acquisition of Syntactic-Semantic System
154 • Measurement and Treatment of Language: Syntax and Semantics

Literature in Translation

The following courses* in foreign literature, culture, and film are open to interested and qualified undergraduates and do not require the knowledge of a foreign language. All lectures, discussions, and assignments are in English. Consult the appropriate college section of the Catalog to determine if these courses are acceptable for the General Education requirements.

Classics
20A—B • Greek and Latin in Current English
37 • Greek Literature in Translation
38 • Latin Literature in Translation
40 • Greek Mythology
100A—B • Greek and Roman Civilization
102 • Greek Tragedy
105 • Ancient Athletics
120 • Greek and Latin Lyric Poetry
125 • Greek and Roman Historiography
130 • Comedy and Satire
135 • Seneca and Roman Tragedy
180 • Classical Archaeology
198 • Special Readings

Comparative Literature
50FS • Freshman Seminar in Comparative Literature

Eastern Languages
Arabic/110 • Arabic Literature in Translation
Chinese/110A—B • Survey of Classical Chinese Literature
Chinese/112 • Survey of Modern Chinese Literature
Chinese/140 • Topics in Chinese Culture
Hebrew/110 • Hebrew Literature in Translation
Japanese/110A—B • Survey of Pre-Modern Japanese Literature
Japanese/112 • Survey of Modern Japanese Literature
Japanese/140 • Topics in Japanese Culture
Semitic Languages/120A—B—C • Historical Semitic Linguistics

French and Italian

French
25X • Seminar on French Literature (subject varies)
102X • Social Attitudes and Language
109X—Y—Z • Survey of French Literature in Translation
137X • Love in the Medieval French Narrative (*Tristan and Isolda. The Romance of the Rose*, Marie de France, Chretien de Troyes, and other works and authors)
138X • Medieval French Drama

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*See appropriate departmental entries for faculty information.
*See departmental listings for course descriptions.

141X • Rabelais
151X • Emotion and Intellect in 17th Century French Culture
161X • Utopian Tradition (Deiderot, Rousseau, Voltaire, Saint-Simon, Fourier, Sartre, Marcuse, and others)
162X • Wit and Satire (*Candide* and *Rasselas*)
163X • Diderot, Sex, and Fiction
164X • Rousseau and the Confessional Urge
170X—Y—Z • 19th Century French Literature (Hugo, Baudelaire, Mallarme, Verlaine, Rimbaud, Chateaubriand, Balzac, Stendhal, Flaubert, Zola, and others)
172X • Literature and the Rise of the Modern World (Hugo, Balzac, Flaubert, Baudelaire, Zola, and other modern French authors)
174X • Aspects of the French Novel (selected modern authors such as Balzac, Stendhal, Flaubert, Zola, Proust, Gide, and Camus)
176X • The Symbolist Heritage (Rimbaud, Verlaine, Mallarme, and other French symbolist poets)
177X • Literature and Religion in Modern France (selected authors such as Hugo, Balzac, Flaubert, Baudelaire, Huysmans, Claudel, Gide, and Mauriac)
178X—Y • French Film: Theory and Practice (Surrealism, New Wave, Cinema verite, Political film-making of the 1960's, etc.)
179X • Decadence (selected authors such as Proust, Gide, Celine, and Genet)
180X—Y • Representative Works of French Literature (selected authors such as Camus, Sartre, Beckett, Genet)
182X—Y • 20th Century French Novel (Valery, Gide, Mauriac, Breton, Sartre, Robbe-Grillet, Beckett, and others)
183X • Introduction to Structuralism
184X—Y—Z • French Film (Rene Clair, Robert Bresson, Jean Vigo, Alain Resnais, Claude Chabrol, Max Ophuls, Francois Truffaut, Jean Cocteau, Jean Renoir, Eric Rohmer, and others)
185X • Contemporary French Theatre (selected authors such as Sartre, Camus, Artaud, Beckett, Ionesco, Genet)
186X • Beckett and Godard: The Difficulties of Creation
187 • Surrealist Film
187X—Y • French Cinema of the 1930's and since World War II
188X • Contemporary French Drama and Film (Beckett, Ionesco, Genet, and such film makers as Godard)
189Y—Z • Personal Documentary (From Vertov to Cinema Verité)

Italian

114X—Y—Z • Masterpieces of the Italian Middle Ages (Dante, Petrarch, Boccaccio)
116X • Machiavelli
116Y • Love and Chivalry in the Italian Renaissance (authors such as Ariosto and Castiglione)
116Z • Love and Society in the Italian Renaissance (Michelangelo, Tasso)
139X—Y—Z • Survey of Italian Literature (from the middle ages to the present)
142X • Contemporary Fiction, Drama, Film
180X—Y—Z • World Cinema
181X—Y • Introduction to Italian Cinema

Germanic and Slavic Languages and Literatures

German

32 • Germany Today
35FS • Freshman Seminar in German Literature
36FS • Freshman Seminar in German Literature
37FS • Freshman Seminar in German Literature
39FS • Freshman Seminar in German Literature via Motion Pictures
138 • German Literature in Motion Pictures
139A—B—C • German Literature in Translation (Schiller, Goethe, Holderlin, Hauptmann, Mann, Kafka, Rilke, Grass, Brecht)
141 • German Literature of the 20th Century in English Translation
149 • The Faust Tradition
159A—F • Great German Writers (Hesse, T. Mann)
160 • Proseminar on Great German Writers
169A—B • The Living German Theater (Hochhut, P. Weiss, Grass)
187 • Strauss and Hofsmannsthal
192 • Truth and Fiction: A Century of German Literature in History

Russian

32 • Russia Today
115A—B • Survey of Russian Literature
120 • Russian Drama
125 • Twentieth Century Russian Literature
130 • Doestoevsky
131A—B • Tolstoy
132 • Solzhenitsyn
133 • Chekov
134 • Nabokov
150 • Russian Folk Literature

Scandinavian

139A—B—C • Scandinavian Literature in Translation
140 • Swedish Film

Spanish and Portuguese

Portuguese

50FS • Freshman Seminar
114 • Literature of the Portuguese Expansion
115 • Brazilian Literature in English Translation
125A—B • Culture and Civilization of Portugal and Brazil

Spanish

50FS • Freshman Seminar
115A—B • Masterpieces of Spanish Literature in English Translation
116 • Juan Ruiz: The Book of Good Love
120A—B • Spanish American Literature in English Translation
142 • Don Quixote in English Translation
180 • Mexican Civilization
181 • Social Poetry of Spain and Latin America in English Translation
188 • Latin American Black Poetry in English Translation

Mathematics

Professors

Seymour Bachmuth, Ph.D., New York University; group theory
Thomas K. Boehme, Ph.D., Cal Tech; functional analysis, operational calculus
Andrew M. Bruckner, Ph.D., UCLA; real analysis
Jack G. Ceder, Ph.D., Washington; real analysis and general topology
John A. Ernest, Ph.D., Illinois; functional analysis, topological groups, Von Neumann algebras, operator theory
Ky Fan, D.Sc., University of Paris; topology and functional analysis
Eugene C. Johnsen, Ph.D., Ohio State; combinatorial mathematics and matrix theory
Paul J. Kelly, Ph.D., Wisconsin; geometry (convexity theory)
Marvin Marcus, Ph.D., Berkeley; linear and multilinear algebra
Henryk Minc, Ph.D., University of Edinburgh; linear algebra, matrix theory and combinatorial analysis
Horace Y. Mochizuki, Ph.D., Washington; group theory
David L. Outcalt, Ph.D., Ohio State; nonassociative algebra
Stephen Simons, Ph.D., Trinity College, Cambridge; functional analysis (Chairman)
James M. Sloss, Ph.D., Berkeley; partial differential equations
Milton Sobel, Ph.D., Columbia; statistics
David A. Sprecher, Ph.D., Maryland; real analysis, superpositions of functions
Robert C. Thompson, Ph.D., Cal Tech; linear algebras, number theory
Lewis F. Walton, Ph.D., Berkeley; Professor Emeritus; foundations of mathematics
Max L. Weiss, Ph.D., Washington; complex analysis, function algebras
Raymond L. Wilder, Ph.D., Wisconsin; Professor Emeritus, Michigan; topology, foundations of mathematics, cultural history of mathematics
Adil Yaqub, Ph.D., Berkeley; ring theory and universal algebras

Associate Professors

Charles A. Akemann, Ph.D., Berkeley; functional analysis
Michael J. Cambern, Ph.D., Berkeley; functional analysis
John E. Doner, Ph.D., Berkeley; logic, computer science
Larry J. Gerstein, Ph.D., Notre Dame; quadratic forms, algebraic number theory
Kenneth C. Millett, Ph.D., Wisconsin; algebraic and geometric topology
Phillip A. Ostrand, Ph.D., Northwestern; general topology and combinatorial mathematics
James B. Robertson, Ph.D., Indiana; probability and ergodic theory
Melvin Rosenfeld, Ph.D., UCLA; functional analysis
Julian Weissglass, Ph.D., Wisconsin; semi-groups
Raymond Y. Wong, Ph.D., Louisiana State University; topology
Julius Zelmanowitz, Ph.D., Wisconsin; rings and modules

Assistant Professors

Kenneth J. Klingenstein, Ph.D., Berkeley; computer science
Dimitri Koutroufiotis, Ph.D., New York University; differential geometry and partial differential equations
J. Douglas Moore, Ph.D., Berkeley; differential geometry

Lecturers

Cecelia Bleecker, Ph.D., Berkeley; functional analysis
Luis Cruz-Kuri, Ph.D., Berkeley; statistics
Ernesto Franco-Sanchez, Ph.D., Berkeley; dynamical systems, ergodic theory, global analysis
Leo Marcus, Ph.D., Hebrew University; logic

Concerns of the department

The Department of Mathematics offers broad training in pure and applied mathematics. On the undergraduate level students can choose between programs which will prepare them for graduate school and career oriented programs. Undergraduate majors are available in the following areas:

Pure mathematics (B.A.; Teacher Training is an available option).
Applied Mathematics (B.A.; available in three emphasis programs)
Economics-Mathematics (B.A.; offered jointly with the Economics Department).
Computer-Science (B.A. and B.S.; interdisciplinary programs administered by the Mathematics Department.)

The M.A. and Ph.D. degrees can be earned with training in a broad range of topics in pure and applied mathematics.

Computer Science major

The Mathematics Department administers a Computer Science major which is described in more detail in Chapter L under the heading "Computer Science." This major is a broadly based interdepartmental program with basic course work in mathematics and electrical engineering and further related courses in these and other disciplines tailored to the specific interests of the student in computing. A student with primary interest in mathematics may prefer a major in applied mathematics with elective courses in computing.

Bachelor of Arts degrees

For the Mathematics and Applied Mathematics majors students should have completed two years of algebra and courses in plane geometry and trigonometry in high school. Students lacking this background should take Mathematics/1 and 2 (or 2X). Students should complete the courses in preparation for their major, as stated below, in their first two years.

Bachelor of Arts — Mathematics

Preparation for the major

Mathematics/3A—B—C, or 11A—B, 4A—B, 6A—B, 8, and 9. Physics/8A—B is strongly recommended.

Upper Division major

A minimum of 40 units in Upper Division mathematics, not including 100A—B—C, is required. Apart from Mathematics/101A and 102A, at ɪast two of these courses must be in algebra and two in analysis, selected in consultation with an adviser. No course may be counted in more than one of these categories. (A classification of courses appears below under the heading "Undergraduate Courses.")

Graduate Preparatory Students preparing for graduate study in mathematics are advised to take Mathematics/108A—B in their sophomore year, 111A—B—C and 122A—B in their junior year and 118A—B—C in their senior year. Students should consult with their faculty adviser in planning their upper division programs.

Teaching Program Students who intend to teach in secondary schools are advised to add Mathematics/6A to their lower Division preparation. Mathematics/108A—B is basic, general background, while 101A—B, 102A—B, and 103 form the core of the teacher training program. Appropriate electives are Mathematics/106, 107, 109, 110, 112A—B, 113, 114, 115 and 137. Especially capable students are encouraged to substitute courses from the Mathematics/111 and either Mathematics/118 or 160 sequences in place of 101A—B and 103.

Bachelor of Arts — Applied Mathematics

Preparation for the major

Mathematics/3—A—B—C or 11 A—B, or 5A—B—C, 6A—B, and 8. Mathematics/5A—B—C should be taken by students on the emphasis program in Mathematical Models in the Physical Sciences. Physics/8A—B—C is required for the emphasis program in Mathematical Models in the Physical Sciences and is strongly recommended for the other emphasis programs.

Upper Division major

A minimum of 40 units in Upper Division mathematics, not including Mathematics/100A—B—C, which should include fulfillment of at least one emphasis program listed below or a suitable alternate emphasis program approved by the Mathematics Department. Mathematics/108A—B is required and should be taken in the sophomore year.

I. Graph theory and combinatorics

Required: Mathematics/104A, 104C, 116, 136 (or 111A—B), 137, 138.
Recommended: Mathematics/108C, 120A—B—C, 131, 150, 151.

II. Optimization

Required: Mathematics/104A, 120A—B—C, 131.
Recommended: Mathematics/104C, 116, 136 (or 111A—B), 137, 160A—B.

III. Mathematical Models in the Physical Sciences

Required: Mathematics/104A, 104B, 122A—B, 125A—B—C, and one year of Upper Division Physics.
Recommended: Mathematics/104C, 119B—C, 134A—B—C.

Students are strongly encouraged to take suitable courses in other departments which are related to their interests in applied mathematics. Such courses may be found in the biological, physical and social science departments of the College of Letters and Science and in the various departments of the College of Engineering. Students need to consult with their faculty adviser in planning their Lower Division preparation in fields related to their interests and in planning their Upper Division program.

Students preparing for graduate study in applied mathematics are advised to take Mathematics/111A—B—C (and not 136) and either Mathematics/118A—B—C or 160A—B in their junior and senior years.

Bachelor of Arts — Economics/Mathematics

Preparation for the major

For this major the student should have had preparation in high school mathematics close to that mentioned above. In the first two years the student should take Economics/1 and 2 and Mathematics/3A—B—C or 11A—B, 4A—B, and 8. Upper Division students transferring from another major or institution may substitute Economics/109 for Economics/1 and 2.

Upper Division major

A minimum of 40 units in Upper Division economics and mathematics is required, not including Economics/109 or Mathematics/100A—B—C, at least 16 units in each department. These must include Economics/104A—B and 105, Mathematics/108A—B and either Economics/141A—B—C or Mathematics/120A—B—C. For breadth, further elective courses are recommended in applied fields of economics and in mathematics courses concerned with optimization. Students should consult closely with their adviser in the Economics or Mathematics Departments concerning their Upper Division program, particularly if the student intends to pursue graduate study in a closely related area such as mathematical economics, applied mathematics, statistics or operations research.

Master of Arts — Mathematics

Candidates for admission must present a bachelor's degree with a major in mathematics or the equivalent of such training. Entering students may be appraised by means of examination in addition to the evaluation of their records. Whenever necessary, supplementary course work will be required. The department offers two plans for completing the degree: *Plan I*, thesis option, and *Plan II*, comprehensive examination option.

Requirements for the degree

Plan I — Thesis option

1. Completion of 36 units of approved course work with at least 18 units at the graduate level, a minimum of 12 units in graduate mathematics courses and up to six units of thesis preparation (Mathematics/598). The remaining courses may be selected from Upper Division or graduate courses in mathematics, or in appropriate related fields with approval of the department.
2. Demonstration of adequate knowledge in linear algebra, modern algebra, real analysis and complex analysis. This requirement may be satisfied by passing Mathematics/108A—B; 111A—B—C; 118A—B—C; and 122A—B with an average grade of at least B. Essentially equivalent courses at another college or university will be evaluated by the Graduate Committee.
3. Preparation of an acceptable thesis under the supervision of a faculty member and oral defense of the thesis before a faculty committee. The student and thesis supervisor must present to the Graduate Committee for its approval a coherent coursework and thesis program about one year before expected graduation.

Plan II — Comprehensive Examination option

1. Completion of 36 units of approved course work. A minimum of 18 units must be taken in graduate mathematics courses. The remaining courses may be selected from Upper Division or graduate courses in mathematics, or in appropriate related fields with approval of the department.

2. Passing of comprehensive written examinations in algebra and in analysis.

Master of Arts in Applied Mathematics

Admission

A candidate must: 1. fulfill the scholarship requirements for graduate study; 2. hold a bachelor's degree in mathematics, computer science, physics or engineering; 3. have had undergraduate course work in matrix algebra, differential equations, advanced calculus and in some area in which mathematics is applied. Evaluation of the candidate's past work will be made by the Mathematics Department and supplemental undergraduate courses will be required when necessary.

Requirements for the degree

A candidate is required to complete 36 units of course work. Nine of these units must be in graduate pure mathematics, nine be in graduate applied mathematics or graduate subjects in which mathematics is applied (e.g., physics, engineering, etc.). A candidate is also required to pass either the analysis or the algebra examination administered regularly by the Mathematics Department. In addition the candidate is required either 1. to take an oral examination on some special topic, or 2. to write a thesis on some topic in an applied field. Persons interested in this program should contact the applied mathematics adviser as soon as possible.

Doctor of Philosophy

A student advances to candidacy for the degree of Doctor of Philosophy in mathematics after having passed an oral qualifying examination. Prior to this, the student must have passed a series of written qualifying examinations and have shown proficiency in two foreign languages, normally chosen from French, German and Russian.

Information about the written qualifying examinations and specific areas of specialization for the doctoral dissertation can be obtained from the department.

Teaching credentials

Students who complete a major in this department may be eligible to pursue a California Teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Consult with designated counselors in the Mathematics Department concerning these requirements.

Students interested in a community college instructors credential and to related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Advising All students are welcome to consult with the mathematics department advisers as to the proper choice of math courses to meet their individual needs. Inquire at the mathematics department office. (6607 South Hall, phone: 961-2171)

Placement Exams Placement exams in algebra, analytic geometry and calculus are given during Registration Week of each quarter. All entering freshmen are urged to take one of them. Times and places are announced in the *Schedule of Classes*.

Correspondence information

Department of Mathematics, University of California, Santa Barbara, California 93106. Phone: (805) 961-2171.

Course listings

Undergraduate course classification

The following is a grouping of the undergraduate courses in Mathematics according to the areas in which they fall and the functions they serve. Some courses are listed in more than one group.

General Interest
Mathematics/8, 10, 12, 13, 30A, 33, 106, 107, 109, 110, 115.

Preparation for calculus
Mathematics/1, 2, 2X.

Calculus
Mathematics/3A—B—C, 4A—B, 5A—B—C, 6A—B, 11A—B, 34A—B, 160A—B.

Algebra
Mathematics/8, 9, 102B, 103, 104A—C, 106, 108A—B—C, 111A—B—C, 115, 131, 136, 138, 141.

Analysis
Mathematics/101B, 104A—B, 118A—B—C, 119A—B—C, 122A—B, 125A—B—C, 126A—B—C, 128, 131, 134A—B—C, 135A—B—C, 140A—B—C, 160A—B.

Applied Mathematics
Mathematics/6A—B, 104A—B—C, 108A—B—C, 116, 119A—B—C, 120A—B—C, 122A—B, 125A—B—C, 131, 134A—B—C, 136, 137, 138, 150, 151, 160A—B.

Combinatorics and Finite Mathematics
Mathematics/30A—B, 116, 137, 138.

Computer Science
Mathematics 6A—B, 104A—B—C, 136, 137, 150, 151.

Geometry and Topology
Mathematics/102A—B, 112A—B, 113, 114, 126A—B—C, 140A—B—C.

Logic and Foundations
Mathematics/109, 110.

Mathematics for Biological and Social Sciences and Economics
Mathematics/6A—B, 10, 12, 30A, 30B, 33, 34A—B—C, 105, 131.

Mathematics for Physical Sciences
Mathematics/5A—B—C, 119B—C, 124A—B—C, 125A—B—C, 131, 140A—B—C.

Statistics and Probability
Mathematics/33, 34C, 105, 107, 117, 120A—B—C.

Teacher Preparation
Mathematics/100A—B—C, 101A—B, 103, 106, 107, 108A—B, 109, 110, 112A, 113, 114, 115, 137.

Mathematics

Lower Division courses

Freshman Seminars The Mathematics Department tries to offer several Freshman Seminars each Fall Quarter. Topics selected depend on current student and faculty interest. Interested students should inquire at the Mathematics Department Office. Units range from one to three.

1 • College Algebra (4) Staff
An introductory course intended to provide a general background in algebra. Also serves as preparation for more advanced courses, e.g., Mathematics/3A, 11A, 34A, for students requiring such preparations.

Numbers and sets, algebraic manipulation, inequalities, functions and graphing, polynomials and the quadratic formula, systems of linear equations.

2 • The Elementary Functions: Logarithms, Exponentials and Trigonometry (4) Staff
An introductory course intended to provide a general background in the exponential, logarithmic and trigonometric functions.

Exponential and logarithmic functions, analytic geometry of lines and circles, geometric description of trigonometric functions, inverse trigonometric functions, trigonometric form of complex numbers, circular functions and their graphs, elementary trigonometric identities, use of trigonometric tables, solution of triangles.

2X • Trigonometry in Calculus (2) Staff
Prerequisite: 1½ years of high school algebra (or Mathematics/1) and concurrent enrollment in a calculus course. Not open to students who have completed Mathematics/2. An introduction to trigonometry as it is used in calculus. Intended for students who have had little or no trigonometry.

3A • Analytic Geometry and Calculus, First Course (4) Staff
Prerequisites:1½ years of high school algebra (or Mathematics/1) and trigonometry (or Mathematics/2 or 2X which may be taken concurrently). Differential calculus including analytic geometry, functions and limits, derivatives, techniques and applications of differentiation, logarithmic and trigonometric functions.

3B • Analytic Geometry and Calculus, Second Course (4) Staff
Prerequisite: Mathematics/1 or 11A. Integral calculus including definite and indefinite integrals, techniques of integration, applications in mathematics and physics.

3C • Analytic Geometry and Calculus, Third Course (4) Staff
*Prerequisite: Mathematics/*3B. Calculus of several variables including partial derivatives, multiple integrals, infinite series, applications in mathematics and physics.

4A • Analytic Geometry and Calculus, Fourth Course (4) Staff
Prerequisite: Mathematics/3C or 11B. Vector calculus including vector-valued functions, differentiation, line and surface integrals, Green's theorem, Stokes' theorem, divergence theorem.

4B • Analytic Geometry and Calculus, Fifth Course (4) Staff
Prerequisite: Mathematics/3C or 11B. First and second order linear differential equations, linear equations with constant coefficients, series solutions, method of undetermined coefficients, Laplace transform.

5A • Calculus for Science and Engineering Students (4) Staff
Prerequisite: Mathematics/3C or 11B. Intended for majors in physical sciences and engineering. First and second order linear differential equations, series solutions, method of undetermined coefficients and variation of parameters, Laplace transforms.

5B • Calculus for Science and Engineering Students (4) Staff
Prerequisite: Mathematics/5A. Vector analysis, matric and linear transformations, partial differentation, Taylor's theorem in several variables, line integrals in two and three dimensions.

5C • Calculus for Science and Engineering Students (3) Staff
Prerequisite: Mathematics/5B. Multiple integrals including transformation of variables, surface integrals, the divergence theorem, Stokes Theorem, Laplace's equation. Does not include a discussion section.

6A—B • Introduction to Computing (4,4) Staff
Prerequisite for Mathematics/6A: Mathematics/3B or 11B which may be taken concurrently; for Mathematics/6B: Mathematics/6A or Engineering/3B or consent of the instructor. Elementary Fortran programming. General structure of computers. Design and programming of algorithms including root finding, numerical integration, the numerical solution of first order ordinary differential equations and Monte Carlo methods. Students will use the computer and learn communication with the operating system and the characteristics of various compilers. Mathematics/6A is intended for those students who have a good grasp of the material in Mathematics/3A or Mathematics/11A.

8 • Introduction to Modern Algebra (4) Staff
Prerequisite: 1½ years of high school algebra. Topics include: principle of induction, integers, integers modulo n, elementary number theory, division and Euclidean algorithms, prime factorization, complex numbers, polynomial rings and properties of polynomials, theory of equations, permutations.

9 • Elementary Linear Algebra (4) Staff
Prerequisite: 1½ years of high school algebra. Intended for majors and non-majors. Topics include vector spaces, linear transformations, vector operations, matrix operations, solutions of systems of linear equations, determinants, characteristic roots and vectors. Emphasis upon computational skills.

10 • Mathematics for the Biological and Social Sciences. (4) Staff
Intended for students with a need for general background in mathematics. Emphasizes computational skills and ideas. Open to students with no training in mathematics beyond high school.

Numbers, scientific notation, significant figures, approximate equality, rational powers, algebraic manipulation, the quadratic formula, summation, expected value, standard deviation, round off and truncation, propagation of error, manipulating large and small numbers, inequalities, coordinates, straight lines, linearization of data, least square method, use of tables, logarithms, growth and decay, flow charts, desk calculators.

11A • Calculus (4) Staff
Prerequisite: Four years of high school mathematics including algebra, trigonometry, and analytic geometry. Differential calculus including analytic geometry, functions and limits, derivatives, techniques and applications of differentiations, logarithmic and trigonometric functions, definite and indefinite integrals, techniques of integration.

11B • Calculus (4) Staff
Prerequisite: Mathematics/11A or 3B. Applications of integration, calculus of several variables including partial derivatives, multiple integrals, infinite series, applications in mathematics and physics.

12 • Mathematics of Finance (4) Staff
Intended for students with a desire for a general background in the mathematics of finance. Emphasizes basic techniques and computational skills. Open to students with no training in mathematics beyond high school. Recommended for students interested in business, managerial science, or actuarial mathematics, and for students majoring in economics.

Simple interest, compound interest, equations of equivalence, simple annuities, ordinary general annuities, amortization and sinking funds, perpetuities.

13 • Mathematics Appreciation (3) Staff
A course intended to give general students a better understanding of the nature of mathematics, the character and origin of different subjects fields in mathematics, and the source of mathematical research.

30A • Finite Mathematics (4) Staff
Prerequisite: 1½ years of high school algebra. Finite problems having applications in the behavioral sciences. Compound statements, sets, combinatorial problems, probability, vectors, matrices. Not open to mathematics majors or students who have passed Mathematics/8.

30B • Finite Mathematics (4) Staff
Prerequisite: Mathematics/30A. Systems of linear equations, linear programming, convex geometry, game theory, and Markov chains.

33 • Statistics (4) Staff
Random variables, sampling distribution, estimation, tests by hypotheses, correlation and regression.

34A • Introduction to Calculus and Statistics (4) Staff
Prerequisite: 1½ years of high school algebra. Calculus of one variable including differentiation curve sketching, max-min problems, exponential and logarithm functions, introduction to integration.

34B • Introduction to Calculus and Statistics (4) Staff
Prerequisite: Mathematics/34A. Techniques of integration, calculus of several variables including partial derivatives and max-min problems, multiple integrals, differential equations including separable equations and systems of linear equations.

34C • Introduction to Calculus and Statistics (4) Staff
Prerequisite: Mathematics/34B. Probability, including expected value, mean and variance, conditional probability; statistics, including estimation, confidence intervals, hypothesis testing, the t test and x^2 test, additional statistical tests.

94 • Group Studies in Mathematics (1-4) Staff
Prerequisite: Consent of the instructor. Lectures and discussions on special topics.

Upper Division courses

100A—B • Mathematics for Elementary Teaching (3,3) Staff
Prerequisites: High school algebra and geometry. Designed for candidates for the elementary teaching credential. Not open to mathematics majors. Numeration systems, properties of sets, structure of the real number system and its subsystems, mathematical justification of computational procedures, division algorithm, congruences, elements of geometry.

100C • Mathematics for Elementary Teaching (3) Staff

Prerequisite: Mathematics/100A—B. Designed to supplement Mathematics/100A—B. Further study of the real number system and its subsystems including elementary number theory and decimal representation. Additional topics from geometry, logic and algebra.

101A • Classical Number Systems (4) Staff
Prerequisite: Mathematics/3C or 34B. Especially suitable for prospective teachers. A conceptual rather than an axiomatic development starting with the natural numbers and progressing through the integral, rational, real, and complex number systems, treating the basic properties of each. (Not open to those who have passed 118A.)

101B • Elementary Real Analysis (4) Staff
Prerequisite: Mathematics/101A. Especially suitable for prospective teachers. Basic theory of real valued functions of a single real variable, limits, continuity, sequential convergence, differentiation, integration, fundamental theorem of calculus. (Not open to those who have passed 118A.)

102A • Modern Elementary Geometry (4) Staff
Prerequisite: Mathematics/3B or 34A. Especially suitable for prospective teachers. Foundation properties of Euclidean 3-space from the Birkhoff axioms. Surveys of concepts new to the traditional secondary course, elements of convex body theory, motions and similarities.

102B • Transformation Geometry (4) Staff
Prerequisite: Mathematics/9, 102A, or 108A, or consent of the instructor. Especially suitable for prospective teachers. Formulation of the theory in 102A in vector and matrix terms with an emphasis upon group properties and with extensions to n dimensions. Discussions of affine, projective, and topological mappings with examples of related invariants.

103 • Introduction to Group Theory (4) Staff
Prerequisite: Mathematics/8. Not open to students who have taken Mathematics/111A. Intended primarily for prospective teachers. Permutation groups, cyclic groups, theory of finite groups, group homomorphisms and isomorphisms, Abelian groups. Applications to number theory and geometry.

104A • Numerical Methods by Approximation (4) Staff
Prerequisite: Mathematics/3C or 11B and either Mathematics/6A or Engineering/3A—B or Electrical Engineering/Computer Science/5. Root finding by iterative methods. Solving systems of linear equatons. Polynomial interpolation. Students will use the computer.

104AL • Laboratory in Numerical Analysis (1) Staff
Prerequisite: Simultaneous enrollment in Mathematics/104A. Instruction in the use of the on-line computer as a means of solving problems from Mathematics/104A.

104B • Numerical Methods in Differential Equations (4) Staff
Prerequisites: Mathematics/104A and either Mathematics/4B, 5A or 119A. Approximation by polynomials. Numerical integration. Numerical solutions of differential equations. Students will use the computer.

104BL • Laboratory in Numerical Analysis (1) Staff
Prerequisite: Simultaneous enrollment in Mathematics/104B. Instruction in the use of the on-line computer as a means of solving problems from Mathematics/104B.

104C • Numerical Methods in Algebraic Problems (4) Staff
Prerequisite: Mathematics/104A, and either Mathematics/9 or 108A. Error analysis. Matrix norms. Iterative methods for solving systems of linear equations. Eigenvalues and eigenvectors. Students will use the computer.

104CL • Laboratory in Numerical Analysis (1) Staff
Prerequisite: Simultaneous enrollment in Mathematics/104C. Instruction in the use of the on-line computer as a means of solving problems from Mathematics/104C.

105 • Non-Parametric Statistical Tests (4) Staff
Prerequisite: Mathematics/33 or 34C or the equivalent. An applied statistics course where we examine modern, practical (distribution-free) significance tests: permutation tests, sign tests, ranking methods. This course does not require calculus and is designed for students in engineering; the physical, biological sicences, and social sciences, and mathematics.

106 • Number Systems of Algebra (4) Staff
Prerequisite: Mathematics/8 or consent of instructor. Brief review of the integral, real, and complex number systems, development of p-adic numbers, algebraic integers, quaternions, Cayley numbers, extension fields of rationals.

107 • Discrete Probability Theory (4) Staff
A systematic development of probability theory for finite sample spaces, conditional probability, independence, counting techniques, binomial distribution, random variables, expectation, and other topics such as Markov chains, Poisson distributions and hypothetical testing.

108A—B • Introduction to Linear Algebra (4-4) Staff
Prerequisite: Mathematics/8. Vector spaces, inner product spaces, linear transformations, matrices, systems of linear equations, equivalence, determinants, eigenvectors and eigenvalues, similarity, diagonalization, normal matrices, congruence, orthogonal and unitary transformations.

108C • Advanced Linear Algebra (4) Staff
Prerequisite: Mathematics/108A—B. Invariant factors and elementary divisors, canonical forms, topics from advanced matrix theory, applied linear algebra, and group representation theory.

109 • Foundations of Mathematics (4) Staff
Prerequisite: Mathematics/8. Introduction to symboliclogic, theory of formal proof, axiom systems, consistency and completeness.

110 • Set Theory (4) Staff
Fundamentals of set theory, ordinal numbers, cardinal arithmetic, transfinite methods.

111A—B—C • Introduction to Abstract Algebra (4,4,4) Staff
Prerequisites: Mathematics/8 and 108A or consent of instructor. Groups, rings, fields, elementary divisors.

112A—B • Projective Geometry (4) Staff
Prerequisite: Mathematics/4A. One- and two-dimensional analytic projective geometry.

113 • Non-Euclidean Geometry (4) Staff
Prerequisite: Mathematics/4A or consent of instructor. Primarily an introduction to hyperbolic geometry with some discussion of other non-Euclidean systems.

114 • Convex Figures (4) Staff
Prerequisite: Mathematics/4A and 9 (or 108A) or consent of instructor. Introduction to theory of convex bodies, primarily in two dimensions.

115 • Number Theory (4) Staff
Prerequisites: Mathematics/4A and 8. Topics include: number bases, factorization, Diophantine equations, congruences, residues, numerical functions, distribution of primes.

116 • Combinatorial Analysis (4) Staff
Prerequisite: Mathematics/8. Elementary counting principles, binomial coefficients, generating functions, recurrence relations, the principle of inclusion and exclusion, distributions and partitions, systems of distinct representatives, applications to computation.

117 • Finite Markov Chains (4) Staff
Prerequisites: Mathematics/107 or 120A. Classification and canonical forms for finite Markov chains, limit laws, applications to the physical and social sciences.

118A—B—C • Introduction to Real Analysis (4,4,4) Staff
Prerequisite: Senior standing is recommended. The real number system, elements of set theory, continuity, differentiability, the Riemann integral, functions of bounded variation, implicit function theorems, convergence processes, special topics.

119A • Differential Equations (4) Staff
Prerequisite: Mathematics/3C or the equivalent. Not open to students who have had Mathematics/4A or 5A. First and second order linear differential equations, linear equations with constant coefficients, series solutions, method of undetermined coefficients, Laplace transform.

119B • Differential Equations (4) Staff
Prerequisite: Mathematics/4B, 5A or 119A. Existence and uniqueness by successive approximations, solutions of systems of differential equations by vector methods, regular singular points, series solutions, special functions.

119C • Differential Equations (4) Staff
Prerequisite: Mathematics/119B. Boundary value problems for partial differential equations, the method of separation of variables, eigenvalues and eigenfunctions, autonomous systems, stability, periodic solutions.

120A—B—C • Probability and Statistics (4,4,4) Staff
Prerequisite: Mathematics/4A. Basic concepts of probability, limit theorems, discrete and continuous random variables, derived distributions, some statistical applications, Point estimation, random sampling, tests of hypotheses, confidence intervals.

122A—B • Introduction to Theory of Complex Variables (4,4) Staff
Prerequisite: Mathematics 4A. Complex numbers, functions, differentiability, series, extensions of elementary functions, complex integration, calculus of residues, conformal maps, mapping functions, applications.

124A—B—C • Topics in Applied Mathematics (3,3,3) Staff
Prerequisite: Mathematics/5C. For majors in the physical sciences or engineering; Fourier series, Laplace transform, partial differential equations, boundary value problems, Fourier transform, topics in complex analysis.

125A—B—C • Mathematical Models in the Physical Sciences (4,4,4) Staff
Prerequisite: Consent of instructor. Topics to be chosen from fluid mechanics, quantum theory, mathematical biology, relativity and other fields. A specific physical problem will be considered and a mathematical model for it developed, usually in the form of a partial or ordinary differential equation, integral-equation, or problem in the calculus of variations. Methods for solving the mathematical problem will be discussed, properties of the solutions examined and interpreted physically.

126A—B—C • General Topology (4,4,4) Staff
Prerequisite: Mathematics/4A or consent of instructor. Set theory, basic notions of topological spaces, continuous maps and homeomorphisms, compactness, product spaces, metric spaces, filters and nets, special topics.

128 • Operational Calculus (4) Staff

Prerequisite: Mathematics/122A. Fourier and Laplace transforms. Parseval's theorem, convolution theorem, inversion formulas, Paley-Wiener theorem and applications.

131 • Linear Optimization and Game Theory (4) Staff
Prerequisite: Mathematics/108A or consent of the instructor. Solving linear inequalities and the simplex method for finding the "best" situation. The duality theorem. Applications will include the equilibrium theorem of mathematical economics and the theory of two-person games. Opportunities will be available for students to use the computer.

132A—B—C • Mathematical Programming (4,4,4) Staff
Prerequisite: Consent of the instructor. Geometry of convex sets, Hahn-Banach theorem systems of linear inequalities, duality theorems of linear programming, Simplex method, two-person games, minimax theorems and equilibrium points, n-person games in characteristic function form, analysis of convex and concave functionals, Fenchel's duality theorem, duality in nonlinear programming, Lagrange multipliers and the Kuhn-Tucker theorem, methods for solving nonlinear programming problems, calculus of variations, optimal control, Pontryagin maximum principle.

134A—B—C • Fourier Transforms and Fourier Series (4,4,4) Staff
Prerequisite: Mathematics/5A—B—C or 119A. Basic theorems of Fourier analysis. Convolution. The delta function. Applications to statistics, applications to sampling and series. The second quarter involves computer applications and requires a working knowledge of a computing language.

135A—B—C • Approximation Theory (4,4,4) Staff
Prerequisites: Mathematics/3A—B—C, 4A, B; 9 or 108A—B. The Weierstrass approximation theorems; linear approximation (Chebyshev theorems, Chebyshev polynomials); algorithms, least square approximation; approximation by linear operators; interpolation of functions; rational approximation; spline-interpolation. Special topics.

135AL—BL—CL • Laboratory in Approximation Theory (1,1,1)
Prerequisite: None. Computer laboratory teaching the use of ONLINE.

136 • Applied Algebra (4) Staff
Prerequisite: Mathematics/8. No credit for both Mathematics/136 and Mathematics/111AB. Sets, mappings, binary relations, and operations, semigroups, groups, boolean algebras, finite fields.

137 • Graph and Network Theory (4) Staff
Prerequisite: Mathematics/9 or equivalent. Graphs, transport networks, applications to optimization.

138 • Algebraic Coding Theory (4) Staff.
Prerequisite: Mathematics/136 or 111A—B. Theory and construction of error correcting codes.

140A—B—C • Introduction to Topology and Differential Geometry (4,4,4) Staff
Prerequisites: Mathematics/4A and 108A. An introduction to modern topology and differential geometry. Topics may include: basic point-set topology, curves and surfaces in Euclidean space, manifolds and vector fields, Riemannian geometry, fundamental group.

141 • Multilinear Algebra (4) Staff
Prerequisite: Mathematics/108B. Duality, multilinear mappings, tensor spaces, symmetry classes, graded algebras, linear transformations on tensor spaces, induced transformations, inner products on tensor spaces, elementary representation theory.

150 • Automata and Formal Languages (4) Staff
Prerequisite: Mathematics/136 or consent of the instructor. Automata and formal languages. Notions of finite state machines. Representations of automata, regular sets, analysis and synthesis theorems. State minimization algorithm. Context free languages. Push-down automata. Classes of formal grammars, corresponding recognition devices. Closure properties of language classes. Deterministic languages.

151 • Models of Computation (4) Staff
Prerequisite: Math/150 or consent of the instructor. Study of models of computation and algorithmic processes, including Turing machines, recursive functions and phase-structure grammars. Example of an unsolvable problem. Results on time and space complexity for the recognition of languages.

160A—B • Advanced Calculus (4,4) Staff
Prerequisite: Math/4B or 5C. Functions of one variable: derivatives; the Riemann integral; improper integrals; power series; uniform convergence. Functions of several variables: partial derivatives; maximum-minimum problems; Lagrange multipliers; the implicit and inverse function theorems; multiple integrals; line and surface integrals; the theorems of Green, Gauss, and Stokes; applications.

190A—B—C • Special Topics in Mathematics (4,4,4) Staff
Prerequisite: Consent of instructor. Information about the special topics to be presented may be obtained from the office of the Department of Mathematics.

192 • Projects in Computer Science (4) Staff
Prerequisite: Consent of instructor. Projects in computer science for advanced undergraduate students. May be repeated for credit with consent of the instructor but with a total limit of 12 units for the three courses, Mathematics/193, EE/192 and Soc/192 combined.

194 • Group Studies for Advanced Students (1—4) Staff
Prerequisite: Consent of instructor. Lectures and discussions on special topics. Enrollment normally limited to 12 or fewer students.

***199 • Independent Studies in Mathematics** (1-5) Staff
199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

*See L-2 198/199 independent studies unit limitations.

Graduate courses

The department does not offer all courses listed below each year. Typically, the department offers courses 200A—B—C, 220A—B—C, 226A—B—C each year and approximately eight to ten additional courses and seminars each quarter. In 1974-75 these additional courses and seminars were: Math/213A—B—C, 224A—B—C, 229A—B—C, 231A—B—C, 232A—B—C, 250A—B—C, 260A; Group Theory and/or Multilinear Algebra; 260CC; Algebraic Geometry.

200A—B—C • Real and Complex Analysis (4,4,4) Staff
Prerequisite: Mathematics/118A—B—C, or equivalent. Real and complex analysis, measure theory, and rudiments of functional analysis.

201A—B—C • Measure and Integration (3,3,3) Staff
Prerequisite: Mathematics/118A—B—C or equivalent. Abstract measures and outer measures, completion of measures, measurable functions, integration, convergence theory, Fubini's theorem, signed measures, measures on locally compact spaces, special topics.

204A—B—C • Advanced Numerical Analysis (3,3,3) Staff
Prerequisites: Mathematics/104A—B—C, or Mathematics/108A, 118A, 119A, or consent of instructor. Topics from: Numerical treatment of partial differential equations, elliptic boundary value problems, hyperbolic and parabolic equations, Stability, error estimates and accelerated convergence. Numerical treatment of integral equations. Variational techniques. Newton method applied to operator equations. Monotone operators.

205A—B—C • Topics in Applied Linear Algebra (3,3,3) Staff
Prerequisite: Mathematics/108A—B, or equivalent, or consent of instructor. Selected topics in applied linear algebra. The topics will vary from quarter to quarter.

209 • Set Theory (3) Staff
Prerequisite: Consent of instructor. A rigorous study of axiomatic set theory; topics include ordinal numbers, transfinite induction, cardinal numbers, cardinal arithmetic, and the Axiom of Choice.

210A—B—C • Advanced Topics in the Theory of Real Functions (3,3,3) Staff
Prerequisite: Mathematics/200A—B—C. Special topics chosen by the instructor. Topics may include: the integrals of Perron, Denjoy, Khintchine and others; the Baire classification of functions and the Borel classification of sets; the measure problem, density theorems, negligible sets, and functions of several real variables.

211A—B—C • Advanced Topics in Complex Variables (3,3,3) Staff
Prerequisites: Consent of instructor. Special topics chosen by the instructor. Possible topics include: several complex variables; Riemann surfaces; potential theory; Hp spaces; entire and meromorphic functions; cluster sets; conformal mappings.

213A—B—C • Probability Theory (3,3,3) Staff
Prerequisite: Mathematics/120A—B—C or equivalent or Mathematics/201A—B—C. Foundations of probability, distribution functions, characteristic functions, stochastic processes, central limit problem, martingales, stationary processes.

214A—B—C • Introduction to Stochastic Processes (3,3,3) Staff
Prerequisites: Mathematics/118A—B, 120A—B—C. Random walks, renewal theory, Markov processes, branching processes, information theory.

215A—B—C • Statistical Decision Theory (3,3,3) Staff
Prerequisite: Consent of the instructor. A basic introductory mathematical statistics course in which statistical concepts and procedures are developed and examined from the point of view of game theory, optimization and decision theory.

216A—B—C • Ranking and Selection (3,3,3) Staff
Prerequisite: Consent of instructor. Ranking and selection problems from parametric and non-parametric point of view. Major emphasis on fixed sample size procedures, and full attention to sequential procedures. Selection of population with largest mean or with smallest variance will be studied carefully.

218A—B—C • Combinatorial Mathematics (3,3,3) Staff
Prerequisites: Mathematics/108A—B and 111A—B. Principle of inclusion and exclusion, recurrence relations, Ramsey's theorem, Polya's theorem, partially ordered sets,

Mobius functions, arrangements with restrictions, systems of distinct representatives, Latin squares and rectangles, block designs, finite geometries, Hadamard matrices, difference sets, (0,1) matrix theory, extremal problems.

220A • Modern Algebra (3) Staff
Prerequisites: Mathematics/108A—B, 111A—B. Group theory.

220B • Modern Algebra (3) Staff
Prerequisite: Mathematics/108A—B, 111A—B. Ring theory.

220C • Modern Algebra (3) Staff
Prerequisite: Mathematics/220A. Field theory and Galois theory.

221A—B—C • Topics In Field Theory (3,3,3) Staff
Prerequisite: Consent of instructor. Selected topics in field theory.

222A—B—C • Topics in Group Theory (3,3,3) Staff
Prerequisite: Consent of instructor. Selected topics in group theory.

223A—B—C • Topics in Ring Theory (3,3,3) Staff
Prerequisite: Consent of instructor. Selected topics in ring theory.

224A—B—C • Topics in Linear Algebra (3,3,3) Staff
Prerequisite: Consent of instructor. Selected topics in linear algebra.

225A—B—C • Topics in Number Theory (3,3,3) Staff
Prerequisite: Consent of instructor. Selected topics in number theory.

226A—B—C • General Topology (3,3,3) Staff
Prerequisite: Mathematics/118A or equivalent. Topological spaces and continuous functions. Filters and convergence. Compactness. Connectedness. Product and quotient spaces, direct and inverse limits. Metric spaces. Completion and compactification. Normal spaces. Paracompactness and metrization. Baire category. Function spaces.

Special topics (retracts, homotopy, maps into spheres, covering spaces, fibre spaces).

227A—B—C • Advanced Topics in Geometric and Algebraic Topology (3,3,3) Staff
Prerequisite: Consent of the instructor. Topics, varying from year to year, include piecewise linear and differential topology, manifolds, fiber bundles and fiber spaces, homotopy theory, and spectral sequences.

228A—B—C • Functional Analysis (3,3,3) Staff
Prerequisite: Mathematics/201A—B, 226 A—B. Linear topological spaces. Hilbert spaces, Banach spaces, locally convex spaces, Banach algebras. Special topics.

229A—B—C • Hilbert Space (3,3,3) Staff
Prerequisite: Mathematics/200A—B—C. Operator theory, *-algebras of operators, both weakly closed (von Neumann algebras) and norm closed (C^*-algebras). Unitary representations of locally compact groups and *-representations of C^*-algebras.

230A—B—C • Topological Groups (3,3,3) Staff
Prerequisites: Mathematics/220A, 226A—B—C. General properties of topological groups. Unitary representations of compact groups. Duality and structure of locally compact Abelian groups. Haar measure. Unitary representations of locally compact groups. Harmonic analysis. Special topics.

231A—B—C • Topological Vector Spaces (3,3,3) Staff
Prerequisites: Mathematics/200A—B—C, 226 A—B—C. Topologico-geometric properties. Weak compactness. Integral representations of compact convex sets. Choquet boundary, simplexes. Barreled spaces. Bornological spaces. Frechet spaces. Montel spaces. Nuclear spaces. Ordered topological vector spaces. Functional representations. Positive operators. Special topics.

232A—B—C • Algebraic Topology (3,3,3) Staff
Prerequisites: Mathematics/220A—B—C, 226A—B—C. Homotopy groups. Fiber spaces. Singular and simplicial homology. Cohomology. Products. Duality theorems.

239A—B—C • Nonassociative Algebra (3,3,3) Staff
Prerequisite: Mathematics/220A—B—C. Associative, Lie, and Jordan algebras. Alternative rings. Generalizations.

240A—B—C • Differential Geometry (3,3,3) Staff
Prerequisites: Consent of instructor. Differential manifolds, tangent vectors, differential forms, vector bundles. Riemannian geometry. Geodesics, minimal submanifolds, first and second variation of arc length. Special topics.

243A—B—C • Ordinary Differential Equations (3,3,3) Staff
Prerequisite: Consent of instructor. Ordinary differential equations in real and complex domains. Existence and differentiability of solutions. Analysis of singular points. Poincare-Bendixson theorem, perturbation theroy, Sturm-Liouville theory, asymptotic expansions, stability.

245A—B—C • Differential Equations and Operator Theory for Physical Sciences (3,3,3) Staff
Prerequisite: Mathematics/118A or consent of instructor. Linear spaces, spectral theory of operators, Green's functions, eigenvalues of ordinary differential equations, partial differential equations.

246A—B—C • Partial Differential Equations (3,3,3) Staff
Prerequisite: Mathematics/118A or consent of instructor. Cauchy-Kowaleski theorem. Characteristics. Theory of initial value and boundary value problems for elliptic, hyperbolic and parabolic equations. Existence of uniqueness of solutions.

250A—B—C • Mathematical Logic (3,3,3) Staff
Prerequisite: Consent of the instructor. Introduction to axiomatic set theory. Equational logic. Formal systems in the first-order predicate calculus. Godel's completeness and incompleteness theorems. The existence of unsolvable problems. Introduction to the theory of recursive functions. Survey of model theory, including the ultraproduct construction, compactness theorem, elementary extensions, Craig's interpolation lemma, saturated models.

260 • Seminars In Mathematics (1-6) Staff
Prerequisite: Consent of instructor. Topics in algebra, analysis, applied mathematics, functional analysis, geometry, statistics, Topology, by means of lectures and informal conferences with members of staff. May be repeated for credit.

270A—B—C • Special Topics in Algebra (3,3,3) Staff
Prerequisite: B.A. or B.S. with mathematics major, or consent of instructor. Intended for students working for Junior College Credential or M.A. in Education with mathematics emphasis. Particular consideration of the relation of special and advanced topics to the junior college and secondary curriculum.

271A—B—C • Special Topics in Geometry and Analysis (3,3,3) Staff
Prerequisite: B.A. or B.S., with mathematics major, or consent of instructor. Intended for students working toward a Junior College credential or M.A. in Education with mathematics emphasis. Particular consideration of the relation of special and advanced topics to the junior college and secondary curriculum.

280 • Surveys in Contemporary Mathematics (3) Staff
Prerequisite: Consent of instructor. An expository treatment of a topic of current interest in mathematics with sufficient detail to impart the flavor of the field. Where appropriate, applications to other fields of mathematics will be included. The course is designed for the nonspecialist in the area treated. The topics will vary from quarter to quarter.

290 • Teaching and Learning Mathematics (1) Staff
Consideration of ideas about the process of learning mathematics and discussion of approaches to teaching.

Mathematics/596—596 • Directed Reading & Research (1-6)

Mathematics/598 • Master's Thesis Research and Preparation (1-6)

Mathematics/599—599 • Ph.D. Dissertation Preparation (1-6)

Medieval Studies

Advisory Committee[1]

Larry M. Ayres, Ph.D.; Associate Professor of Art (Committee Chairman).
Alva W. Bennett, Ph.D.; Associate Professor of Classics.
Alfredo A. Bonadeo, Ph.D.; Associate Professor of Italian.
Walter H. Capps, Ph.D.; Professor of Religious Studies.
Frank C. Gardiner, Ph.D.; Associate Professor of English.
C. Warren Hollister, Ph.D.; Professor of History.
Anne Kernan, Ph.D.; Assistant Professor of English.
Donald Maddox, Ph.D.; Assistant Professor of French.
Robert A. Potter, Ph.D.; Lecturer in Dramatic Art.
Joan M. Reitzel, Ph.D.; Assistant Professor of History.
Harvey L. Sharrer, Ph.D.; Assistant Professor of Spanish.
John T. Waterman, Ph.D.; Professor of German.

Concerns of the program

The Major in Medieval Studies is designed to allow for a variety of approaches to the study of medieval civilization. Courses are available in art history, drama, English and other European literatures as well as comparative literature, history, music, and religious studies. Emphasis varies in individual programs, but the basic goal is to achieve as clear and full an undertaking as possible of the culture of medieval Europe. By developing a broadly based understanding of medieval culture, which represents a civilization remote from our own yet related to it, we can hope to attain clearer perspectives on our own age.

The program is intended to serve students interested in an undergraduate liberal arts major as well as those who plan to pursue graduate studies in the field. In consultation with members of the committee, students will set up individual programs structured around their special interests. Students should maintain close contact with their advisers in order to inform themselves concerning courses and extra-curricular lectures and discussions in the medieval field.

Bachelor of Arts

Preparation for the major

History/4A—B. A reading knowledge of Latin and a modern European language will be necessary for those who plan to continue their studies on the graduate level.

Upper Division major

Forty units from the following list, the selection to consist of related courses forming a coherent program and to be approved by a member of the Advisory Committee.

Art/153A—B—C—D—E, 155B
Comparative Literature/120
Dramatic Art/160B
English/111, 115, 142, 152A—B, 157, 197*
French/109A, 136A—B—C, 137X, 138X
German/120, 121
History/113B, 113Q, 115, 115Q, 116, 117A—B, Q, 119, 120A, 145A—B, 150A, 155A, 195*
Italian/106A, 110A—B—C, 111A—B—C, 114X, Y, Z, 116X, 139X
Latin/103, 106, 111, 116, 117, 132, 133
Medieval Studies/100
Music/112A, 148, 179
Philosophy/157
Portuguese/105A, 121A—B, 125A
Religious Studies/100, 115, 116, 117, 125, 135, 137, 187
Spanish/110A, 115A, 116, 119A, 121A—B, 122A—B, 123A, 183*, 198*
Tutorial Colloquium,* and/or Tutorial/100,* (up to 16 units), 199*

Correspondence information

Medieval Studies Program Arts Building, Room 1316, University of California, Santa Barbara, California 93106 Phone: (805) 961-3138

Medieval Studies

Upper Division course

100 • Aspects of Medieval Civilization (4) Staff
An interdisciplinary course which examines a cultural whole: the political and intellectual history, the literature, the art and architecture of a given center of medieval civilization (e.g., pre-conquest England, medieval Spain, or the court of Charlemagne). Topics will vary and the course may be repeated for credit.

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[1] See appropriate departmental entries for faculty information.

*Course content varies; applies only where appropriate to Medieval Studies. See L-2 for 198/199 independent studies unit limitations.

Middle Eastern Studies

Committee in charge

David S. Gebhard, Ph.D., Professor of Art.
Robert Hetzron, Ph.D., Professor of Hebrew.
George M. Haddad, Ph.D., Professor of History (Chairman of the Committee).
Charles Wendell, Ph.D., Lecturer in Arabic.

Concerns of the program

The major in Middle Eastern Studies is an interdepartmental major designed for students who wish to pursue graduate study in this area or professional careers that require residence in, or knowledge of the Middle Eastern countries. It is also intended to serve the needs of those who desire a general education with special emphasis on this important area.

The selection of the courses should be made by the student in consultation with the committee in charge on the basis of the needs and objectives of the individual student.

Preparation for the major

Students majoring in Middle Eastern Studies must take five quarters (20 units) in one of the languages of the area. This requirement can be satisfied at the present by either Arabic/1, 2, 3, 4, 5, or Hebrew/1, 2, 3, 115A—B. Students who have taken intensive language courses elsewhere and can demonstrate an equivalent level of competence, as judged by the committee in charge, may waive this requirement.

In addition, the student is required to take eight units of Lower Division work selected from the following: History/46, Art/6A, Political Science/45.

Upper Division major

Forty units of Upper Division courses must be selected from the following: Anthropology/140, 156, Art/152A—B, 165B, Arabic/110, 198, Hebrew/110, 115A—B—C, (not to be counted for students who took this in preparation for the major), 120A—B—C, 199, Semitic Languages/120A—B—C, History/110, 145A—B, 146A—B, 195, Political Science/147, 150, 196, Religious Studies/115, 116, 117, 119, 130, 131, 132, 124A—B, 140A—B—C, 194.

In selecting the forty units, every major must take (from the preceding list) four units of anthropology, four units of history, four units of Arabic or Hebrew literature, four units of religious studies, and a senior seminar. (History/195 or Political Science/196 or Religious Studies/194).

Correspondence information

Chairman of the Program, Middle Eastern Studies, University of California, Santa Barbara, California 93106. (805) 961-2991.

Military Science

Professors

Wallace A. Lee, Lt Colonel, Armor, M.A., Hawaii; education (Chairman of the Department).

Assistant Professors

Don L. Merchant, Lt Colonel, Ordnance, M.S., New Mexico State; mechanical engineering.
Charles R. Scribner, Captain, Infantry, M.A., UCSB; political science.
Charles R. Meyer, II, Captain, Infantry, M.S. UCSB; mechanical engineering.
James E. Damm, Captain, Field Artillery, M.S., UCSB; educational psychology.

Concerns of the department

The department offers a general Military Science curriculum designed to conform to the academic pattern of the Santa Barbara campus. Military Science classes are open to all students with the consent of the instructor. As part of the total academic experience, particularly freshman and sophomore students are encouraged to enter the ROTC program or take the lower division courses without any obligation toward the military.

The Military Science curriculum is a part of the Army Reserve Officers Training Corps ROTC program which leads to a commission as a second lieutenant in the U.S. Army. Enrollment in the ROTC program is on a voluntary basis and is limited to qualified men and women students. Attendance at Leadership Laboratory is required for all ROTC students in addition to enrollment in Military Science courses.

The Army ROTC program is divided into two parts: (1) two years of Lower Division subjects, or Basic Course, to prepare the student for advanced instruction and (2) two years of Upper Division work, or Advanced Course, for selected students. Satisfactory completion of Advance course and graduation from the university lead to a commission as a second lieutenant in the U.S. Army Reserve; distinguished students may qualify for a commission in the Regular Army.

Transfer students and others who did not take the Basic Course may receive equivalent ROTC credit for these classes by attending a six-week advanced camp at a designated Army installation in the summer between their sophomore and junior year. Successful completion of this camp will qualify the student for direct entry into the Advanced Course. Attendees at this six-week summer camp are given an allowance for travel expenses and are paid for their period of camp attendance.

Admission to the Upper Division Advanced Course is limited to selected students who meet all academic and physical requirements. Enrollees in this course must execute a contract with the U.S. Army agreeing to complete the course and accept a commission, if one is offered. In return, the student receives a 1D draft deferment and a cash payment of $100 per month for each school month he is enrolled in the program. Upon completion of the Advanced Course and graduation from the university, the student is commissioned as a second lieutenant in one of the branches or arms of the U.S. Army. Insofar as possible, the student's desires and academic major will be considered by the Army when making branch assignments.

Students selected for the advanced ROTC will attend a six-week advanced camp between their junior and senior years. Attendees at this camp are given an allowance for travel expenses and are paid for their period of camp attendance. Additionally, the advanced ROTC student in both the junior and senior years must take a course of at least three units in one of the following fields: Effective Communications; Science Comprehension; General Psychology, Political Development and Political Institutions.

Scholarship Program. Army ROTC Scholarships are available for various terms to selected applicants. These scholarships pay all costs for tuition, books, and other student fees, and $100 per month cash to the student. Full four-year scholarships are offered to high school seniors selected by nationwide competition. A limited number of three-, two- and one-year scholarships are available to outstanding students enrolled in the ROTC program at the university level. Full details are available at the Military Science Department.

Flight Training Program. Flight training for qualified ROTC students is offered at no cost to the student during the senior year. Successful participation in the flight training program leads to an FAA private pilot license and prepares the student for the Army Flight School and a tour of duty in Army Aviation.

ROTC students desiring to obtain advanced degrees may, subject to the needs of the Army, be granted up to four years' delay in reporting for active duty. For ROTC graduates, the period of active duty is normally two years, but may be less, contingent upon the needs of the service. Students accepting ROTC scholarships and/or flight training may be required to serve longer terms of active duty.

Military Science

Leadership Laboratory required for all ROTC students to provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders. Other students who enroll in ROTC courses are not required to attend leadership laboratory for course credit.

Lower Division courses

1A • U.S. Defense Establishment (1) Lee
The study of the development of the U.S. Defense Establishment from the American Revolutionary War through World War II, to include its origins and constitutional basis, its evolution and emergence as a professional military force. Within this evolutionary context, the course emphasis is on contemporary issues relating to the military force structure and its utilization. Leadership laboratory required for all ROTC students.

1B • U.S. Defense Establishment (1) Scribner
The study of the development, organization and functions of the Department of Defense. Includes studies of the roles, missions and organization of the various armed services and of collective defense agreements. Leadership Laboratory required for all ROTC students.

1C • U.S. Defense Establishment (1) Lee
The study of the varied missions of the U.S. Army, to include military assistance and civic action programs, public works tasks, development of reserve forces and training for unconventional warfare. Leadership Laboratory required for all ROTC students.

2A • American Military History (2) Meyer
Study of selected battles and campaigns of the American Revolutionary War, War of 1812, and the War with Mexico. Leadership Laboratory required for all ROTC students.

2B • American Military History (2) Meyer
Study of selected battles and campaigns of the American Civil War, War with Spain and the First World War. Leadership Laboratory required for all ROTC students.

2C • American Military History (2) Meyer
The study of selected battles and campaigns of World War II, the Korean conflict and the early years of the Vietnam conflict. Leadership Laboratory required for all ROTC students.

Upper Division courses

103A • Principles of Leadership (2) Merchant
The study of the principles of leadership, responsibilities and basic qualities of a leader, leadership traits and special problems of military leadership. The study of theories of management and organizational behavior and of the decision making process. Additionally, familiarization with communication systems and procedures used in the military team. Leadership Laboratory required for all ROTC students.

103B • Advanced Tactical Theory (2) Lee
The advanced study of tactical theory within the framework of the military team. Familiarization with small military unit organizations and operations. Fundamentals of offensive and defensive combat and their application. Includes one field trip as course requirement. Leadership Laboratory required of all ROTC students.

103C • Principles of Military Instruction (2) Merchant
Introduction to military teaching techniques and principles of planning instruction. Familiarization with methods of instruction and practical application by the student, who is required to prepare several presentations, which include teaching a lesson, and use of closed-circuit television for self-evaluation. Leadership Laboratory required for all ROTC students.

104A • Military Management (2) Merchant
The study of the fundamentals of decision making, command and control problems, staff relationships, evaluation of situations and analysis of courses of action. Leadership Laboratory required for all ROTC students.

104B • Fundamentals of Military Law (2) Lee
The study of military law and the fundamental concepts of military judicial procedures contained in the Uniform Code of Military Justice; rules of evidence, pre-trial and appellant procedures. Leadership Laboratory required for all ROTC students.

104C • World Change and Military Implications (2) Scribner
Analysis of the role of the United States in the contemporary world arena, with emphasis on the leadership and management problems of the U.S. Army in support of this role. A portion of the quarter will be a treatment of the U.S. Army's mission in stability operations for developing and transitional societies. Leadership Laboratory required for all ROTC students.

Music

Professors

Lloyd Browning, M.A., Claremont College *(Emeritus).*
Roger E. Chapman, Ph.D., UCLA *(Emeritus).*
Van A. Christy, Ph.D., Columbia *(Emeritus).*
Erno Daniel, P.S.D., Royal University of "Peter Pazmany", Budapest; piano.
[3]*Maurice Faulkner*, Ph.D., Stanford; music education, percussion, orchestration.
Peter Racine Fricker, F.R.C.O., Royal College of Organists, London; theory and composition.
Karl Geiringer, Ph.D., Universities of Vienna and Berlin *(Emeritus).*
John Gillespie, Ph.D., USC; harpsichord, baroque music, music appreciation.
Stefan Krayk, License de Concerts, Ecole Normale de Musique; violin, chamber music.
[4]*Stanley D. Krebs*, Ph.D., Washington; theory, composition, chamber music.
Wendell Nelson, D.M.A., Northwestern; piano. (Chairman)
Denis Stevens, M.A., Jesus College, Oxford University; medieval music, musica antiqua.
Dorothy L. Westra, M.S.M., Union Theological Seminary; voice, chorus.
[1]*Clayton Wilson*, M.M., Northwestern; oboe, woodwind chamber ensemble.
Carl Zytowski, M.A., Washington; voice, opera workshop, chorus.

Associate Professors

[4]*Edward Applebaum*, Ph.D., UCLA; theory and composition.
Helen M. Barnett, M.A., USC. *(Emeritus).*
Emma Lou Diemer, Ph.D., Eastman School of Music; theory and composition.
Dolores M. Hsu, Ph.D., USC; romantic and early 20th century music.
Peter A. Mark, M.S., Juilliard School of Music; viola, chamber music.
Geoffrey B. Rutkowski, M.M., USC; cello, chamber music.

Assistant Professors

Robert N. Freeman, Ph.D., UCLA; classical music.
[1]*Michael Ingham*, M.A., Denver University; voice, chorus.
Betty Oberacker, D.M.A., Ohio State; piano, chamber music.

Lecturers

Burnett F. Atkinson, Performer's Certificate, Curtis Institute of Music; flute, flute choir.
Suzanne Balderston, B.M., Oberlin Conservatory of Music; harp.
David Gordon, Ph.D., Eastman School of Music; theory and composition.
Roger D. Grove, M.M., University of Tulsa; piano, class piano, accompanying, pedagogy.
James Kanter, B.A., CSU Northridge; clarinet, Woodwind Chamber Ensemble.
Glenn Lutz, B.M., CSU Northridge; trumpet.
Peter Mercurio, double bass.
Ronald Ondrejka, M.M., Eastman School of Music; University Symphony; conducting.

Concerns of the department

The Department of Music curriculum includes undergraduate courses for the major which lead to completion of either the Bachelor of Arts degree (with emphases in theory-history, theory-composition, performance, or special performance) or the Bachelor of Music degree, a professional degree in performance. The undergraduate major programs are designed to serve as a background for professional careers in music, as preparation for graduate studies, or as an area of concentration for a liberal arts education.

Performance ensembles are available for all qualified students, and a wide range of undergraduate courses is offered for non-majors which will fulfill elective requirements.

The graduate program includes courses leading to the M.A. degree in musicology, composition, or performance, and the Ph.D. degree in musicology or composition.

Requirements for entering music students

All new music majors, whether freshmen or transfers from other institutions or departments, are required to take placement tests in music theory, class piano, and peformance. These tests are given during registration week only at the beginning of each quarter, and should be taken prior to enrollment in music major classes.

Bachelor of Arts degree

Students majoring in music must meet the general education requirements as specified by the catalog. The Department recommends History/4A—B—C, and French, German, or Italian as elective courses. Students must pass the sophomore audition, participate in and attend student recitals, and engage in at least one performance laboratory per quarter with or without credit. Students transferring from other institutions are required to complete at least three quarters within the Department.

Upper Division major

Theory-history emphasis

Preparation for the major Music/2; 5A—B—C—D—E; 7 (sophomore paper); and 31—32 or 33 (six units or less, determined by entrance audition); piano proficiency test.
The major 40 Upper Division units: Music/101, or 102, or 103; 106A; 112A—B—C; 18 units in theory and/or history courses selected with the guidance of a faculty adviser; Music/198 (a senior research paper, meeting standards approved by the faculty of the Department, required of all theory-history majors).

Theory-composition emphasis

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[1] Absent on leave Fall 1975
[2] Absent on leave Winter 1976
[3] Absent on leave Spring 1976
[4] Absent on leave 1975-76

Preparation for the major Music 2; 5A—B—C—D—E; 7 (sophomore paper); and 31—32 or 33 (six units or less, determined by entrance audition); piano proficiency test.

The major 40 Upper Division units: Music/101, or 102, or 103; 106A; 112A—B—C; 18 units in theory and/or composition courses selected with the guidance of a faculty adviser; Music/198 (a senior composition, meeting standards approved by the faculty of the Department, required of all theory-composition majors).

Performance emphasis

Preparation for the major Music/2; 5A—B—C—D—E; 7 (sophomore paper); and 31—32 or 33 (six units or less, determined by entrance audition); piano proficiency test, except for piano majors.

The major 40 Upper Division units: Music/101, or 102, or 103; 106A; 112A—B—C; 18 units in performance courses selected with the guidance of a faculty adviser; Music/198 (a senior performance audition, meeting standards approved by the faculty of the Department, required of all performance majors). Each student is required to participate in five public performances before the senior audition.

Special performance emphasis

This is a specialized performance major in any of the following areas: conducting, piano, carillon, organ, harpsichord, voice, flute, oboe, clarinet, bassoon, trumpet, French horn, trombone, violin, viola, violoncello, double bass, percussion and harp. A high standard of performance must be shown in a special entrance audition. Students interested in a conducting emphasis should check in the Music Office for specific details regarding requirements.

Preparation for the major Music 2; 5A—B—C—D—E; 7 (sophomore paper); and 31—32 or 33 (six units or less, determined by entrance audition); piano proficiency test, except for piano majors.
The major 40 Upper Division units: Music 101, or 102, or 103; 112A—B—C: and 24 units in performance courses selected with the guidance of a faculty adviser, but to include Music 197 and 198 (a senior audition as well as a senior recital, meeting standards approved by the faculty of the Department, required of all special performance majors). Each student is required to participate in five public performances before the senior audition.

Bachelor of Music

The Bachelor of Music degree is open by audition to certain specially qualified students in performance. Information concerning admission to this program may be obtained by visiting or writing to the Department of Music. Details concerning the General Education requirements for this degree as well as the major requirements are available at the Department of Music.

Master of Arts

Two different Master of Arts degrees are available in music. One, which involves a thesis or composition is described first. The other is the Master of Arts degree in musical performance, which involves a recital and supporting document. See B-10 for admission to graduate status general requirements.

The Master of Arts degree in Musicology or Composition

Deficiencies

Following guidance examinations taken at entrance, the department may specify certain prerequisites to remedy any deficiencies in the student's undergraduate background. Normally such courses will not be included in the 36 units described below. Ordinarily more than three quarters will be needed to complete the following requirements.

Requirements

A minimum **of 36 units** distributed as follows:
1a — Musicology: 13 graduate units in Music/200A—B, 269A and two courses chosen from 261 through 268.
1b — Composition: 23 graduate units in Music/200A, 208A—B—C, 269A—B and two courses chosen from 261 through 268.
2 — 23 units (for musicology), or 13 units (for composition) to be selected with the guidance of a faculty adviser. At least three of these units must be in graduate courses; the remainder may be in Upper Division courses. Further, these units must include three units in a liberal arts area outside of music and three units of Upper Division performance. However, if the student's work in performance is on the graduate level, the Upper Division requirements in performance will be waived, and the student will be allowed a maximum of six units of graduate level performance which will include the presentation of a graduate recital.
A satisfactory reading knowledge of French, or German, or Italian must be demonstrated by examination. In certain cases the department may accept substitution of another foreign language for one of those listed above.
A thesis or a composition — depending upon the chosen field of emphasis. A composition should be at least 20 minutes in length and contain more than one movement; in addition, a supporting document must accompany this project.

The Master of Arts degree in Musical Performance or Conducting

Entrance

Students entering the program leading to the Master of Arts Degree in Musical Performance will normally be expected to possess a B.A. degree in Music from UCSB with a Special Performance emphasis or a degree based on equivalent training. An entrance audition demonstrating graduate level ability in performance must meet with the approval of an appropriate faculty committee. Ordinarily more than four quarters will be needed to complete the following requirements.

Requirements

A minimum of 48 quarter units distributed as follows:

18 units of graduate level performance consisting of 220 • Graduate Performance (6-12 units); 221 • Graduate Chamber Music (0-6 units); 295 • Graduate Recital (six units). Students majoring in conducting shall take 230 • Graduate Instrumental Conducting (eight units); and 231 • Graduate Vocal Conducting (four units); instead of Music/220 and Music/221.

14 units of graduate level history and literature including Music/200A (two units), and two courses selected from Music/261 through 269A—B (six units); the remaining six units are to be selected with the guidance of a faculty adviser.

16 units of electives which may include Upper Division courses and courses outside the department to be selected with the guidance and approval of the Graduate Adviser. From two to six Upper Division ensemble units will be required and will be accepted as part of the 16 units of electives.

Proficiency in at least one foreign language must be demonstrated. The foreign language selected must have the approval of the department.

Public performances are required in addition to the course work as follows: a graduate recital; a graduate chamber or solo performance; and, including the above, at least one significant performance each quarter. Students majoring in conducting are not required to offer a graduate chamber or solo performance. A record of the graduate recital (which will normally occur in the final quarter) in the form of a tape of the actual performance will be placed in the departmental archives. A written document is to be completed by the candidate giving the historical background and an analysis of the recital material.

Doctor of Philosophy — Musicology or Composition emphasis

1. In addition to fulfilling the general requirements for admission to graduate status, the department requires completion of an M.A. degree in music from UCSB, or a degree based on equivalent training. Students having a degree from another institution must take a placement examination during the first quarter of residence. Students who do superior work may bypass the master's degree and proceed directly to the Ph.D.
2. The student must demonstrate by examination a reading knowledge of French and German and of such other languages as the field of specialization may require. One such examination should normally be passed before the M.A. degree is earned.
3. Students working toward the Ph.D. degree are required to take 30 units in specified courses in the history and theory of music, or composition including those seminars in the Music/261 through 269 series that have not previously been taken. The Ph.D. candidate is also required to take 12 units in an approved field outside of music. Those qualified in performance may earn three graduate units by means of a lecture-recital given before the qualifying examinations.
4. Before being admitted to candidacy, the student must pass a series of written and oral qualifying examinations in music, history, theory, bibliography and literature covering the whole range of music history and theory.
5. A dissertation giving evidence of ability to conduct independent research of high quality, *or* a collection of compositions, including at least one of substantial size, is required of all candidates. The candidate in musicology will defend the dissertation in an oral examination. The candidate in composition will present an analysis of the compositions and relate them to contemporary practice.

Career opportunities

Degree programs in music at UCSB are designed primarily to provide preparation leading to careers in performance, teaching,composition, and music history. There are, however, opportunities for other careers in music such as music publishing, management, librarian work, television, radio, recording, and films; while specialized training in these areas is not offered by the department, the requisite musical background can be acquired at UCSB.

Teaching credentials

Students who complete a major in this department may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. In addition to the courses listed above for the departmental major, the teaching major requires 42-48 units in the following: Music/151A—B, 152, 153, 154, 20A—B (or 25), 108, 120A—B, MI/290, MV/290 and M/292A—B—C—D—E—F. Some of these units may be used as electives within the major. For further information concerning the teaching major in Music the student must confer with designated counselors in Music.

Successful completion of the M.A. or Ph.D. in Music is required for issuance of the Community College Instructors Credential. Students interested in the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Departmental correspondence may be sent to: Department of Music, Music Room 1315, University of California, Santa Barbara, California 93106. Phone: (805) 961-3261

Music

Lower Division courses

1FS • Freshman Seminar in Music (2) Zytowski
Prerequisite: Permission of Instructor. The course will, by means of performance, discussion, and assigned reading, evaluate the professional standards needed for the composer, performer, scholar, or music teacher.

2 • Introduction to Music History (3) Staff
Prerequisite: Music/11 or equivalent. For the major. A brief survey of Western Music, with concentration on stylistic characteristics of the different periods. Selected works of principal composers are discussed in detail.

5A—B—C—D—E • Music Theory (4,4,4,4,4) Staff
Prerequisite: Passing grade on theory placement exam. For the major. A combined theory course, including written and keyboard harmony, sight singing, and ear-training.

7 • Form and Analysis (3) Staff
Prerequisite: Music/5E or permission of instructor. For the major. Analysis of the structural elements of tonal music and the application of standard formal procedures to the creative process of music composition.

11 • Fundamentals of Music (4) Staff
The study of notes, scales, triads, inversions, rhythm, harmony, and musical terminology. Laboratory activities include keyboard orientation, sight-singing and ear-training.

15 • Music History and Appreciation (4) Staff
For the nonmajor. A selective survey of music of Western Civilization; evolution of forms, styles, media. Designed to enable the student to listen with understanding.

15FS • Freshman Seminar in Music (3) Staff
Prerequisite: Permission of instructor. An explanation of the development of Western Music as an artistic form.

16 • Masterworks of Music (4) Staff
Prerequisite: Music/15 or permission of the instructor. For the nonmajor. A familiarization of non-music majors with great works of music, the latter being chosen to represent various media, textures and historical styles.

19 • Harp (1-3) Balderston
Prerequisite: Music/31A or permission of instructor. May be repeated for credit up to 18 units.

20A—B—C • Elementary Voice (1,1,1) Westra, Ingham
Prerequisite: Music/11 or permission of instructor. Primarily for the instrumental music major and the music minor. Audition required.

24 • Carillon (1-3) Staff

Prerequisites: Music/33 or equivalent and permission of instructor. May be repeated for credit up to 18 units.

25 • Intermediate Voice (1-3) Zytowski, Westra, Ingham
For the vocal major. May be repeated for credit up to 18 units.

26 • Intermediate Strings (1-3)
Lec. 1 • Violin Krayk
Lec. 2 • Viola Mark
Lec. 3 • Cello Rutkowski
Lec. 4 • Double bass Mercurio
May be repeated for credit up to 18 units.

27 • Intermediate Woodwinds (1-3) (Wilson in charge)
Lec. 1 • Oboe Wilson
Lec. 2 • Flute Atkinson
Lec. 3 • Clarinet Kanter
Lec. 4 • Bassoon Marsh
May be repeated for credit up to 18 units.

28 • Intermediate Brass (1-3)
Lec. 1 • Trumpet Lutz
Lec. 2 • French Horn Lott
May be repeated for credit up to 18 units.

29 • Intermediate Percussion (1-3) Faulkner
May be repeated for credit up to 18 units.

30 • Organ (1-3) Staff
Prerequisites: Music/31A—B or equivalent and permission of instructor. May be repeated for credit up to 18 units.

31A—B—C • Basic Piano (1,1,1) Staff (Grove in charge)
Placement by audition. Primarily for Music majors, and Music minors.

32A—B—C—D—E—F • Class Piano (1,1,1,1,1) Staff (Grove in charge)
Placement by audition. Primarily for Music majors, and Music minors.

33 • Intermediate Piano (1-3) Nelson, Daniel, Grove, Oberacker
For piano majors only. May be repeated for credit up to 18 units.

Performance laboratories

Courses 34 through 48 may be repeated for credit up to six units with the exception of Music/42. Enrollment by audition or permission of instructor.

34 • The Chamber Singers (1) Westra

35 • Women's Glee Club (1) Ingham

35S • Women's Glee Club — The Dorians (1) Ingham
Concurrent enrollment in Music/35 required.

36 • Men's Chorus (1) Zytowski

36S • Men's Chorus — Schubertians (1) Zytowski
Concurrent enrollment in Music/36 required.

37 • University Singers (1) Westra

38 • Opera Workshop (1) Zytowski

39 • Performance Laboratory (1) Staff

41 • Piano Ensemble (1) Daniel, Grové, Nelson, Oberacker

42 • Orchestra (2) Ondrejka
May be repeated for credit up to 12 units.

43 • Flute Choir (1) Atkinson

44 • Chamber Music Ensemble (1) Staff
May be repeated for credit up to nine units.

45 • Brass Choir (1) Staff

46 • Woodwind Ensemble (1) Staff

47 • Symphonic Wind Ensemble (1) Staff

47S • Jazz Ensemble (1) Staff

48 • Musica Antiqua (1) Staff
Performance workshop in Medieval and Renaissance music.

Upper Division courses

101 • Twentieth Century Techniques (4) Staff
Prerequisite: Music/5E or equivalent.

102 • Sixteenth Century Counterpoint (4) Staff
Prerequisite: Music/5E or equivalent.

103 • Canon and Fugue (4) Staff
Prerequisite: Music/5E or equivalent.

***104 • Advanced Counterpoint** (4) Staff
Prerequisites: Music/101, 103 or equivalent.

105 • Computer Music Programming (2) Diemer
Prerequisite: Permission of instructor. An introduction to the techniques of computer synthesized music with an emphasis on programming in Music V computer language. Course work will cover computer systems, theory of digital synthesis, and familiarization with FORTRAN IV.

105L • Lab in Computer Music Programming (1) Diemer
Prerequisite: Music/105. May be repeated for credit up to three units.

106A—B • Orchestration (4,4) Faulkner
Prerequisite: Music/5E or equivalent. 106A or its equivalent is prerequisite to 106B.

107 • Advanced Orchestration (2-4) Fricker
Prerequisite: Music/106A—B or equivalent.

108 • Composition (4) Diemer, Fricker, Krebs
Prerequisite: Music/5E or equivalent.

109 • Advanced Composition (2-6) Diemer, Fricker, Krebs
Prerequisite: Music/108 or equivalent.

109L • Introduction to Electronic Music (2) Diemer
Prerequisite: Music/108 or permission of instructor. An introduction to history and development of electronic music, and to the basics of laboratory techniques. May be repeated for credit up to four units.

110A—B—C • Score Reading and Analysis (2,2,2) Ondrejka
Prerequisite: Music/121A—B—C. For conducting majors only.

***111 • Jazz Arranging** (2-4) Staff
Prerequisite: Permission of instructor.

112A—B—C • History and Analysis of Music (4,4,4) Staff
Prerequisites: Music/5E, 7. For the major.

112L • Music Library Research Techniques (2) Silver
Prerequisites: Music/112A—B—C and permission of instructor. An introduction to research in the music library for the music major in performance, theory history, and theory composition.

***113 • History and Literature of Russian Music** (4) Krebs
Prerequisite: Music/15 or equivalent. For the non-major. A survey of Russian music from its beginnings, but emphasizing the romantic and modern (Soviet) periods.

***114 • History of Jazz** (4) Staff
Prerequisites: Music/15 or equivalent and permission of the instructor. Primarily for the non-major. **(Same as Black Studies/114A.)**

***114B • The Evolution of Rock** (4) Staff
Prerequisites: Music/11, 15 and permission of instructor. A comprehensive survey of the beginnings and evolution of rock from its precursors in country and western, blues, and gospel, through its development into rock and roll and eventually the various forms of rock.

115A • Symphonic Literature (4) Staff
Prerequisite: Music/15 or equivalent. For the non-major.

115B • History and Literature of Concerto (4) Nelson
Prerequisite: Music/15 or equivalent. For the non-major.

***116A • History and Literature of Hispanic-American Music** (4) Gillespie
Prerequisite: Music/15 or equivalent. For the non-major.

***116B • Non-Western Music** (4) Gillespie
Prerequisite: Permission of instructor. A study of the music of selected peoples of non-Western cultures, including considerations of musical form and structure, performance practice, and the history and social context of the music.

117 • History and Literature of Opera (4) Zytowski
Prerequisite: Music/15 or equivalent. For the non-major.

118A • History and Literature of Chamber Music (4) Staff
Prerequisite: Music/15 or equivalent. For the non-major.

118B • The Music of Ludwig van Beethoven (4) Freeman
Prerequisite: Music/15 or equivalent. A survey of the stylistic development of Beethoven's music, using representative works from each period of this life.

119A • History and Literature of Keyboard Music (4) Staff
Prerequisite: Music/15 or equivalent. For the non-major.

***119B • History and Literature of Organ Music** (4) Staff
Prerequisite: Music/15 or equivalent. For the non-major.

120A—B—C—D—E—F • Conducting (2,2,2,2,2,2) Ondrejka
Prerequisite: Music/106A or permission of instuctor. Must be taken consecutively.

121A—B—C • Projects in Conducting (2,2,2) Ondrejka
Prerequisites: Music/120A—B—C and permission of the instructor.

122 • Fundamentals of Conducting (3) Ingham
Prerequisites: Music/11, 31A—B. Not for the major.

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*Not to be offered 1975-76.

123 • Advanced Harp (1-3) Balderston
Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

124 • Advanced Carillon (1-3) Staff
Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

125 • Advanced Voice (1-3) Zytowski, Westra, Ingham
Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

126 • Advanced Strings (1-3)
Lec. 1-Violin. Krayk
Lec. 2-Viola. Mark
Lec. 3-Cello. Rutkowski
Lec. 4-Double bass. Mercurio
Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

127 • Advanced Woodwinds (1-3)
(Wilson in charge)
Lec. 1-Oboe. Wilson
Lec. 2-Flute. Atkinson
Lec. 3-Clarinet. Kanter
Lec. 4-Bassoon. Marsh
Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

128 • Advanced Brass (1-3)
Lec. 1-Trumpet. Lutz
Lec. 2-French Horn. Lott
Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

129 • Advanced Percussion (1-3) Faulkner
Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

130 • Advanced Organ (1-3) Staff
Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

131 • Harpsichord (1-3) Gillespie
Prerequisite: Permission of instructor. May be repeated for credit up to 18 units.

132A—B—C • Piano Accompanying (2,2,2) Grove
Prerequisite: Permission of instructor.

133 • Advanced Piano (1-3) Nelson, Daniel, Grove, Oberacker
Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

151A—B—C • Strings (2,2,2) Staff
Primarily for the credential. Should be taken consecutively.
A • Violin and Viola
B • Cello and Double bass
C • Orchestral

152 • Brass (3) Faulkner
Primarily for the credential.

153 • Woodwinds (3) Wilson
Primarily for the credential.

154 • Percussion (2) Faulkner
Primarily for the credential.

161 • Music of Ludwig van Beethoven (4)
Prerequisite: Music/112A—B—C or permission of instructor.

162 • Orchestra Music (4) Staff
Prerequisite: Music/112A—B—C or permission of instructor.

163A • Keyboard Music (4) Gillespie
Prerequisite: Music/112A—B—C or permission of instructor.

***163B • Organ Music** (4) Staff
Prerequisite: Music/112A—B—C or permission of instructor.

164 • Chamber Music (4) Staff
Prerequisite: Music/112A—B—C or permission of instructor.

***165 • Art Song** (4) Westra
Prerequisite: Music/112A—B—C or permission of instructor.

166 • The Concerto (4) Nelson
Prerequisite: Music/112A—B—C or permission of instructor for the major.

***167A • National Elements in Hungarian Music** (4) Daniel
Prerequisite: Music/112A—B—C or permission of the instructor.

***167B • National Elements in Scandinavian Music** (4) Applebaum
In depth discussion and analysis of Scandinavian music concentrating on the 19th and 20th centuries.

***173A—B • History and Literature of Church Music** (4,4) Gillespie
Prerequisite: Music/112A or permission of instructor.

174 • Non-Western Music (4) Gillespie
Prerequisite: Permission of instructor. A study of the music of selected peoples of non-Western cultures, including considerations of musical form and structure, performance practice, and the history and social context of the music. For the major.

***175 • Contemporary Jazz** (4) Staff
Prerequisite: Permission of the instructor. Primarily for the major.

177 • Opera and Music Drama (4) Zytowski
Prerequisite: Music/112C or permission of instructor. A study of the history and literature of opera and music drama from its origins to the present day.

***178 • History of Musical Instruments** (4) Staff
Prerequisite: Music/112A or permission of instructor. A study of the development and use of musical instruments from classical antiquity to the present day.

179 • Studies in Medieval Music (4) Staff
Prerequisite: Music/112A or permission of instructor. Primarily for the major emphasizing history and theory. Introduction to the liturgy and music of the Middle Ages based on manuscripts from the Santa Barbara Mission.

180 • Studies in Renaissance Music (4) Staff
Prerequisite: Music/112A—B or permission of instructor. Primarily for the major emphasizing history and theory. Cantus firmus settings of the fifteenth century. Chanson and motet. The parody mass of the sixteenth century.

***181 • Studies in Baroque Music** (4) Gillespie
Prerequisite: Music/112A—B or permission of instructor.

182 • Studies in Classic Music (4) Freeman
Prerequisite: Music/112A—B—C or permission of instructor.

183 • Studies in Romantic Music (4) Hsu
Prerequisite: Music/112A—B—C or permission of instructor.

184 • Studies in Contemporary Music (4) Fricker
Prerequisite: Music/112A—B—C or permission of instructor.

***185 • Music Criticism** (4) Staff
Prerequisite: Music/112A—B—C or permission of instructor.

***186 • Introduction to Musical Acoustics** (3) Jacobs
A course designed to introduce the fundamental acoustical properties of musical instruments.

***187 • Strauss and Hofmannsthal** (4) Hsu and Exner
For majors, either in the Department of Music or Department of Germanic & Slavic Languages. An interdisciplinary course on the collaboration between composer and poet. A study of the correspondence and the operas with special emphasis on *Elektra, Der Rosenkavalier* and *Ariadne*. This is a related course to German/187.

188 • The French Art Song from Symbolism to Surrealism (4) Hsu and Cushing
Prerequisite: Permission of instructors. Open to Music and French majors. An interdisciplinary study in text-music relationships from Faure to Poulenc; from Baudelaire to Eluard. May be taken for credit only once as either Music/188 or French/188.

194 • Group Studies for Advanced Students (1-4) Staff
Prerequisite: Permission of instructor.

$198 • Senior Auditions (2) Staff
Required for graduation. Senior Audition or paper.

$199 • Independent Studies in Music (1-5) Staff

Performance laboratories

Courses 134 to 148 may be repeated for credit up to nine units with the exception of Music/142. Admission by audition or permission of instructor.

134 • The Chamber Singers (1) Westra

135 • Women's Glee Club — The Dorians (1) Ingham
Concurrent enrollment in Music/135 required.

136 • Men's Chorus (1) Zytowski

136S • Men's Chorus — Schubertians (1) Zytowski
Concurrent enrollment in Music/136 required.

137 • University Singers (1) Westra

138 • Opera Workshop (1) Zytowski

139 • Performance Workshop (1) Staff

141 • Piano Ensemble (1) I, II, III Daniel, Nelson, Grove, Oberacker

142 • Orchestra (2) Ondrejka
May be repeated up to 18 units.

143 • (1) Atkinson
Prerequisite: Audition or permission of instructor.

144 • Chamber Music Ensemble (1) Staff

145 • Brass Choir (1) Staff

146 • Woodwind Ensemble (1) Staff

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*Not to be offered 1975-76.
$See L-2 198/199 independent studies unit limitations.

147 • Symphonic Wind Ensemble (1) Staff

147S • Jazz Ensemble (1) Staff

148 • Musica Antiqua (1) Staff
Performing workshop in Medieval and Renaissance music.

Graduate courses

200A—B • Bibliography and Research Techniques (2,2) Hsu

A. A survey of music bibliography and research methods for the graduate student.

B. Individual research projects and discussions designed to give the graduate student understanding of the different approaches to historical and systematic musicology.

***201A—B—C • Notation and Music: Their Historical Interrelation** (3,3,3) Staff

A. Plainchant-Neumes-Polyphony-Modal Notation.
B. Origin and Development of the Mensural System.
C. Instrumental Tabulators for Keyboard and Lute.

***207 • Seminar in Orchestration** (3) (3,3,3) Applebaum

208A—B—C—D—E • Graduate Composition (3,3,3) I, II, III The Staff

220 • Graduate Performance (2) Staff
Prerequisite: Audition. May be repeated for credit up to six units.

221 • Graduate Chamber Music (2-6) Staff
Prerequisite: Permission of instructor. Performance in chamber ensembles.

230 • Graduate Instrumental Conducting (2) Ondrejka
Prerequisite: Audition. May be repeated for credit up to eight units.

231 • Graduate Vocal Conducting (2) Ondrejka
Prerequisite: Audition. May be repeated for credit up to four units.

***250 • Master's Seminar in Music Theory** (4) Applebaum

261 • Seminar in Music of the Early Middle Ages (3) Staff
The beginnings of polyphony in treatises and practical sources. The school of Notre Dame. The motet of the thirteenth century.

262 • Seminar in Music of the Late Middle Ages (3) Staff
Fourteenth century secular music in Italy and France. The motet from Ph. de Vitrltaly to G. de Machaut, Polyphonic settings of the Mass ordinary.

263 • Seminar in Music of the Renaissance (3) Staff
G. Dufay and the beginnings of the Netherlands School. Vocal and instrumental aspects of sixteenth century music. The rise of instrumental music in the fifteenth and sixteenth century.

264 • Seminar in Music in the Early Baroque Period (3) Gillespie

265 • Seminar in Music of the Late Baroque Period (3) Gillespie

266 • Seminar in Music of the Classical Period (3) Freeman

267 • Seminar in Music of the Early Romantic Period (3) Hsu

268 • Seminar in Music of the Late Romantic Period (3) Hsu

269A • Seminar in Twentieth Century Music before 1945 (3) Diemer

269B • Seminar in Music since 1945 (3) Staff

270A—B • Master's Seminar in Music Education (3,3) Faulkner

***273 • Seminar in Church Music** (4) Gillespie

275 • Seminar in Music Criticism (3) Hsu

***276 • Seminar in Style and Form in Twentieth Century Music** (4) Fricker
A detailed study of specially chosen major works of present day music.

***278 • Seminar in History of Musical Instruments** (3) Staff

280 • Seminar in Ethnomusicology (3) Hsu
Study of the evolution of the discipline: its theories and its methods. Major aspects of ethnomusicological research exemplified in the study of music in Chinese history.

281 • Interdisciplinary Studies (3) Staff

***283 • Seminar in Philosophy and History of Music Education** (4) Faulkner

289 • Transcription, Editing and Performance of Early Music (2) Staff
May be repeated for credit.

295 • Graduate Recital (2-6) Staff
Preparation of public recital required for degree.

594AA-594ZZ • Special Topics (1-4) Staff
Special seminar in selected problems of current musicology, composition, or performance.

595AA-595ZZ • Group Studies (3) Staff
Critical review of research in selected problems of musicology, composition, or performance.

596AA-596ZZ • Directed Reading and Research (2) Staff
Individual tutorial for research in musicology, composition, or performance; instructor will usually be student's major Professor.

597AA-597ZZ • Individual Study for Ph.D. Examinations (1-4) Staff
Instructor will be student's major Professor or Chairman of his/her Doctoral Committee.

598AA-598ZZ • Preparation for the Master's Degree (1-4) Staff
Instructor will be Chairman of student's Thesis Committee, directing research in musicology, composition, or performance. Maximum of 12 units total.

599AA-599ZZ • Ph.D. Dissertation Preparation (1-4) Staff
Instructor will be Chairman of student's Doctoral Committee. Maximum of 12 units total.

590 series courses may be taken for a maximum of 24 units.

Music Education courses

Education

ME/190A—B • Piano Pedagogy (2-2) Grove
Prerequisite: Open to all music majors and minors with permission of instructor. A study of basic principles of teaching; includes a survey and evaluation of methods and materials.

ME/191 • String Pedagogy (2) Krayk
Prerequisite: Open to all music majors and minors with permission of instructor. A study of basic principles of teaching strings; includes methods and materials.

MI/390 • Curriculum, instructional procedures and materials used in Teaching Instrumental Music (3) Faulkner
Prerequisite: Music/151A—B, 152, 153, 154 or permission of instructor. Includes methods in both elementary and secondary schools.

MV/390 • Curriculum, Instructional procedures and materials used in Teaching Vocal Music (3) Faulkner
Prerequisite: Music/20A, 20B, or equivalent. Vocal materials, curriculum, and methods of teaching in both the elementary and secondary schools.

M/392A—B—C—D—E—F • Student Teaching: Music (3-6) Faulkner
Prerequisites: MI/390, MV/390. To give music major and minor experience for general secondary credential in teaching music (classes, conducting and lessons).

M/393A • Problem Seminar in Teaching Music (1) Faulkner
Prerequisite: Concurrent enrollment in M/392/A—B—C—D—E—F. For the major. Studies of the problems arising in student teaching.

M/393B • Problem Seminar in Teaching Music (1) Faulkner
Prerequisite: Concurrent enrollment in M/392A—B—C—D—E—F. For the minor. Studies of the problems arising in student teaching.

***ME/393 • Elementary Music Curriculum and Procedures** (3) Westra
Prerequisite: Music/20A—B, or equivalent.

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*Not to be offered 1975-76.

Natural Science Program

Professors

Curtis B. Anderson, Ph.D., Associate Professor of Chemistry*.
Robert M. Eisberg, Professor of Physics.
Colin A. Wraight, Ph.D., Assistant Professor of Biological Sciences*.

Concerns of the program

The Natural Science Program is a unified survey of important concepts in the natural sciences and their technological and social implications, sponsored jointly by the Department of Physics, Chemistry and Biological Sciences.

Lower Division courses

The courses are not open to students who have completed a college level course in the Biological or Physical Sciences. Exceptions can be made with consent of the instructor and approval of the Dean.

1A • Contemporary Natural Science — Physics (4) Eisberg
Not open for degree credit for students who have completed Physics/10. Lecture, four hours. A Modern description of matter from the scale of the universe to the scale of subatomic particles. The focus is on the concepts and ideas which man has devised to describe the order, simplicity and beauty of nature at its most fundamental level and which form the basis of current scientific and technological disciplines. The course is basically descriptive involving little use of mathematics but some familiarity with high school algebra is useful. Offered Fall quarter.

1B • Contemporary Natural Science — Chemistry (4) Anderson
Prerequisite: NS/1A or Physics/10, or consent of instructor. Not open for degree credit to students who have completed Chemistry/25. Lecture, three hours; laboratory, two hours. Introductory survey of basic chemical principles in the context of selected technological and environmental problems. Topics have included: atomic theory, states of matter, the mole in weight relations and solutions, electronic structure of the atom, bonding in molecules, periodicity, the atmosphere and atmospheric pollution, rates of reaction and equilibrium, ionic equilibrium and pH, thermodynamics, energy production and classes of organic compounds. Laboratory experiments demonstrate how analytical measurements can be made adnvarious chemical phenomena. Offered Winter Quarter.

1C • Contemporary Natural Science — Biology (4) Wraight
Prerequisites: NS/1A—B. Not open for degree credit to students who have completed Biology/20 or Botany/20. Lecture, four hours. Selected aspects of modern biology. Topics generally include cell structure, cellular chemistry, nutrition, population growth, birth control, basic genetics, evolution and ecology. Offered Spring Quarter.

Philosophy

Professors

Herbert Fingarette, Ph.D., UCLA; philosophy of psychology, philosophy of law, Chinese philosophy.
[2] [3]*Noel Fleming,* D.Phil., Oxon; philosophy of mind, history of philosophy, aesthetics.
Alexander Sesonske, Ph.D., UCLA; aesthetics (film), ethics, classical philosophy, philosophy of language.
Paul D. Wienpahl, Ph.D., UCLA; history of philosophy, oriental philosophy, metaphysics, Spinoza.
Burleigh T. Wilkins, Ph.D., Princeton; philosophy of history, political and legal philosophy.

Associate Professors

Francis W. Dauer, Ph.D., Harvard; theory of knowledge, Hume, Wittgenstein, logic.
Hubert R. G. Schwyzer, Ph.D., Berkeley; philosophy of language, metaphysics, Kant, contemporary philosophy. (Chairman)
Charlotte Stough, Ph.D., Berkeley; Classical philosophy, history of philosophy.

Assistant Professors

J. William Forgie, Ph.D., Cornell; philosophy of religion, philosophy of language.
Richard J. Ketchum, Ph.D., University of Pennsylvania; ancient philosophy, logic, history of philosophy.
Lloyd R. Reinhardt, B.A., Berkeley; philosophy of language, philosophy of mind, ethics.
William C. Smith, Ph.D., Princeton; philosophy of language, metaphysics, epistemology, logic.

Acting Assistant Professor

Maria T. Celo Cruz, M.A., Harvard; philosophy of law, ethics, social philosophy.

Lecturer in Philosophy

Robert B. Zeuschner, M.A., UCLA; Asian philosophy, philosophy of religion.

Concerns of the department

The major in philosophy is of two kinds: (I) that designed to prepare the student for graduate study in philosophy, and (II) that for the student who is intending to go on to graduate work in another field, for example, law, or the student whose interests are limited to a liberal education leading to the Bachelor of Arts degree.

Bachelor of Arts — Major I

Preparation for the major

Philosophy/20A—B—C (must be taken in sequence); and 183 and 184*.

Upper Division major

48 Upper Division units in Philosophy including the following specified courses:
Group A: Two quarters of Philosophy/135 (170 may be substituted for one quarter); and 111 or 181.
Group B: At least three courses from the following: Philosophy/160,

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*See appropriate departmental entries for faculty information.
[1] Absent on leave Fall 1975
[2] Absent on leave Winter 1976
[3] Absent on leave Spring 1976

161, 162, 163, 164, 165.

Group C: Either Philosophy/166A—B or two courses from the following: 151, 152, 153, 156 (one of these must be 152 or 153).

The remaining courses to be chosen according to the student's interests.

*(183 and 184 may be counted here.)

(NOTE: It should not be assumed that every course listed in the above three Groups will be offered each year.)

Bachelor of Arts — Major II

Preparation for the major

Philosophy/20A—B—C (must be taken in sequence); Philosophy/3 or 183. (183 may be applied toward the Upper Division units required.)

Upper Division major

36 Upper Division units in Philosophy which must include at least one course from Groups A and B, and two courses from Group C as specified above.

Master of Arts

The graduate program in Philosophy is a Ph.D. program. Only in special circumstances will the Department accept students whose aim is limited to earning the M.A. degree. However, provision is made within the Ph.D. program for awarding the M.A. degree when the student has demonstrated the requisite level of competence. For further details see the *Graduate Division Announcement.*

Candidate in Philosophy

The degree of C.Phil. is received on passing the Oral Qualifying Examination for Advancement to Candidacy for the Ph.D.

Doctor of Philosophy

(A student who is substantially short of an undergraduate major in Philosophy should apply for admission as a student in Limited Status. When the deficiencies have been made up (as recommended by the Graduate Advisor) the student may then apply for admission into the Graduate Program in Philosophy.)

1. **Preliminary Requirement** All incoming graduate students are required, except under special circumstances, to complete successfully the Introductory Graduate Seminar (Philosophy/200) as a prerequisite to continuation in graduate status. Although this seminar is offered only in the Fall Quarter of each year, provision may be made for admission to the program in other quarters.
2. **There is no foreign language requirement.**
3. **Logic requirement** The student must show proficiency in logic either by passing Philosophy/183 and 184, or by having passed their equivalent elsewhere, or by examination.
4. **Course requirements** Upon satisfactory completion of the Introductory Graduate Seminar the student will be required to complete a minimum of 12 courses (not including Philosophy/183, 184 and 200). (For students who have done graduate work elsewhere, adjustments may be made.) At least six of the 12 courses must be four-unit graduate seminars.
5. **Advancement to Candidacy** There are two stages of being advanced to candidacy.

   A. The student shall write during the period of one quarter a substantial paper on a topic to be determined jointly by the student and a three-member committee of the faculty. In evaluating this paper the committee will seek evidence of depth and ability requisite to the writing of a doctoral dissertation. This Qualifying Paper must be accepted before advancement to the Oral Qualifying Examination.

   B. The student will be required to pass an Oral Qualifying Examination. Upon successful completion of this examination the student will be awarded the M.A. degree and advanced to candidacy for the Ph.D. degree (C.Phil.).
6. **Satisfactory completion of a dissertation and an oral defense** thereof conclude the requirements for the Ph.D. degree.

Requirements for graduate study not leading to a degree.

Students are permitted to do advanced studies in philosophy without working for a higher degree. Such students need not have majored in philosophy, although they must have taken a number of courses in philosophy. Only such of the regulations as apply to admission and standards concern these students.

Career opportunities

Offerings in philosophy are not only intended to provide undergraduate preparation for graduate study in philosophy; they are designed to contribute to general education and to preprofessional training in areas (e.g. law) where early specialization is normally discouraged. In numerous instances courses are directly related to specific disciplines or groups of disciplines for which they are intended to supply a philosophical framework (e.g., "Aesthetics" for the arts, "Philosophy of Science" for the natural sciences, etc.). The staff should be consulted for the courses best adapted to these several purposes. Graduates in Philosophy often pursue careers in the social services.

Teaching credentials

Students who complete a major in philosophy may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Department of Philosophy, Ellison Hall 6834, University of California, Santa Barbara, Santa Barbara, California 93106. Phone: (805) 961-3122.

Philosophy

A list of courses to be offered each quarter, with specific descriptions and texts, will be available at the Department of Philosophy office at the time pre-enrollment counselling begins.

Lower Division courses

Any Lower Division course (with the exception of Philosophy/10FS) will apply to the Area D, Humanities General Education requirement. (See G3)

1 • Short Introduction to Philosophy (4) Staff
Not open for credit to students who have completed Philosophy/5. Philosophical ideas in terms of which western civilization seeks to understand itself and the world of which it is a part.

3 • Critical Thinking (4) Dauer
Practical reasoning, argumentation, and the analysis of language as instruments of sound thinking in everyday life.

4 • Introduction to Ethics (4) Sesonske
An examination, at an introductory level, of such ethical issues as: why be moral, moral relativism, the nature of virtues and vices; and possibly consideration of practical ethical problems such as abortion or war.

5 • Ideas and Practice of Philosophy (4) Staff
Not open for credit to students who have completed Philosophy/1. An introduction to ways of thinking philosophically and to philosophical ideas. For the non-major who desires to emphasize reading in original texts and frequent oral and written discussion. Enrollment limited to 20 Lower Division students only.

8 • Contemporary Issues in Philosophical Perspective (4) Stough
A philosophical examination of moral issues of current interest. Topics to be discussed will be announced in the Departmental course description list (available at Department Office).

10FS • Freshman Seminar (3) Staff
Prerequisite: Freshman standing. Course content will vary with different instructors. A specific problem in philosophy will be studied and discussed and a term paper will be required. Detailed descriptions will be available at the Department office at the time pre-enrollment counselling begins for Fall quarter.

12 • Introduction to the Philosophy of Religion (4) Forgie
An introduction to several traditional philosophical problems connected with religious belief.

20A—B—C • History of Philosophy (4,4,4) Staff
Must be taken in sequence; exceptions allowed only with consent of the instructor.
A • From Thales to Aristotle
B • Medievalists to Rationalists
C • Empiricists and Kant

Upper Division courses

NOTE: At least one Lower Division course, or consent of the instructor, is required for any Upper Division course. See course descriptions for more specific prerequisites.

101 • The Practice of Analytic Philosophy (4) Staff
Prerequisite: See NOTE under Upper Division courses A course devoted to the writing of philosophy, both critical and constructive, within the analytic tradition and on current problems. The nature of analytic philosophizing will be discussed.

104 • Ethics (4) Staff
Prerequisite: See NOTE under Upper Division courses. A history of ethical theory.

105 • Contemporary Ethical Theory (4) Staff
Prerequisite: See NOTE under Upper Division courses.

108 • Philosophy of the Social Sciences (4) Wilkins
Prerequisite: Philosophy/183 and two Upper Division social science courses recommended. Logical and methodological problems of the social sciences. Analysis of various claims that the social sciences have a necessarily unique methodological status amongst the sciences.

111 • Metaphysics (4) Schwyzer, Wienpahl
Prerequisite: See NOTE under Upper Division courses. This course may be repeated up to eight units.

112 • Philosophy of Religion (4) Forgie
An advanced study of some of the following topics: divine prediction, the nature of God, the existence of God, religious experience, religious language.

118 • Philosophy in the Nineteenth Century (4) Staff
Prerequisite: See NOTE under Upper Division courses. German idealism, romanticism and the philosophical implications of 19th century scientific developments.

119 • American Philosophy (4) Ketchum
Prerequisite: See NOTE under Upper Division courses. American philosophy since 1800; idealism, naive realism, critical realism, pragmatism.

121 • Political Philosophy (4) Wilkins
Prerequisites: See NOTE under Upper Division courses. Upper Division standing in Political Science, or permission of instructor. Analysis of fundamental political conceptions; the state, sovereignty, political obligation, natural rights, natural law, etc.

123 • Classical Chinese Philosophy (4) Fingarette, Wienpahl
Prerequisites: Six units of philosophy or East Asian Studies, or consent of the instructor. A study of selected classic texts of the period of the "philosophers" (approximately 500 to 200 B.C.). Primary emphasis on the *Analects* and the *Tao Te Ching.* (See detailed description of course available at Philosophy Department Office.)

124 • Philosophy of Science (4) Wilkins
Prerequisites: Philosophy/183 and two Upper Division science courses recommended. Analysis of the interrelated functions of scientific theories, models, laws, experiments, and observational procedures in relation to the goals of explanation, prediction, control, and understanding. Problems of induction and the logic of confirmation.

127 • Philosophy of History (4) Wilkins
Prerequisites: See NOTE under Upper Division courses.

128 • The Philosophy of Karl Popper (4) Wilkins
Prerequisite: See NOTE under Upper Division courses. An exploration of Popper's philosophy of natural and social science and his moral and political philosophy.

129 • Philosophical Method and the Linguistic Turn (4) Wilins
Prerequisite: See NOTE under Upper Division courses. This course explores (1) how modern philosophy came to be concerned with questions of methodology and (2) the legitimacy of the claim that language analysis is the best (or only) methodology available to the philosopher. Some effort will be made to explore the differences between philosophy, science, and common sense. Readings in Descartes (who originated the modern preoccupation with method), and Hegel (who opposed methodology as a special object of inquiry), but mainly in G.E. Moore, the early positivists, some contemporary ordinary language philosophers, and Richard Rorty's *The Linguistic Turn*.

132 • Existentialism (4) Staff
Prerequisite: See NOTE under Upper Division courses. This course may be repeated up to 8 units.

133 • Philosophy of Language (4) Reinhardt, Schwyzer
Prerequisite: See NOTE under Upper Division courses. A study of certain recent philosophical accounts of the nature of language, of what it is to speak and to understand, and of the relation of language to its subject matter.

135 • Contemporary Philosophy (4) Staff
Prerequisite: Philosophy/20C or consent of the instructor. This course may be repeated up to 12 units.

136 • Aesthetics (4) Fleming, Sesonske
Prerequisite: See NOTE under Upper Division courses. Analysis of the aesthetic experience, the aesthetic object, the creative act, and art criticism.

137 • Aesthetic Theory (4) Schwyzer, Sesonske
Prerequisite: See NOTE under Upper Division courses. A study of some major works in the philosophy of art from Plato to the present, with emphasis on the development and analysis of the basic concepts employed in criticism of the arts.

146 • Philosophy in Literature (4) Fingarette, Fleming
Prerequisite: See NOTE under Upper Division courses. Study of philosophical ideas expressed in the literature of the Western world.

151 • Pre-Socratics (4) Stough, Ketchum
Prerequisite: Philosophy/20A—B.

152 • Plato (4) Stough, Ketchum
Prerequisite: Philosophy/20A, or consent of the instructor.

153 • Aristotle (4) Stough
Prerequisite: Philosophy/20A—B, or consent of the instructor.

156 • Hellenistic Philosophy (4) Stough
Prerequisite: Philosophy/20A—B. An examination of the thought of major Greek philosophers of the Hellenistic period.

157 • Medieval Philosophy (4) Staff
Prerequisites: Philosophy/152 and 153, or consent of the instructor.

160 • Descartes (4) Wienpahl
Prerequisite: Philosophy/20B—C, or consent of the instructor.

161 • Spinoza (4) Wienpahl
Prerequisite: Philosophy/20B—C, or consent of the instructor.

162 • Leibniz (4) Reinhardt
Prerequisite: Philosophy/20B—C, or consent of the instructor.

163 • Locke (4) Fleming, Ketchum

Prerequisite: Philosophy/20B—C, or consent of the instructor.

164 • Berkeley (4) Fleming
Prerequisite: Philosophy/20B—C, or consent of the instructor.

165 • Hume (4) Fleming, Dauer
Prerequisite: Philosophy/20B—C, or consent of the instructor.

166A—B • Kant (4,4) Schwyzer
Prerequisite: Two courses from the sequence from 160 through 165, or consent of the instructor. Must be taken in sequence. An examination of the philosophy of Kant with special attention to the *Critique of Pure Reason*.

167A—B • Hegel (4,4) Staff
Prerequisite: See NOTE under Upper Division courses.

168 • Nietzsche (4) Fleming
Prerequisite: Philosophy/20B—C, or consent of the instructor.

169 • Phenomenology (4) Staff
Prerequisite: Philosophy/20B—C, or consent of the instructor. An examination of the philosophies of Husserl and his disciples.

170 • Wittgenstein (4) Schwyzer, Forgie
Prerequisite: Philosophy/20A—B—C, or consent of the instructor.

175 • Other Philosophers (4) Staff
Prerequisites: At least one course in Philosophy and permission of the instructor. Course content will vary. Philosophers not taught in a regular course offering — such philosophers as Plotinus, Bacon, Hobbes, Pascal, Reid, Schopenhauer, Bradley — yet whose work is intrinsically important will be studied. Students may check with the Department Office for more detailed information before enrolling. May be repeated up to twelve units.

180 • Philosophical Psychology (4) Fingarette, Fleming, Reinhardt
Prerequisite: Consent of the instructor. An examination of some of the concepts of the mind, such as those of desire, intention, action, perception, sensation, and the unconscious. May be repeated up to eight units.

181 • Theory of Knowledge (4) Reinhardt
Prerequisite: See NOTE under Upper Division courses. This course may be repeated up to eight units.

182 • Concepts of Psychoanalysis (4) Fingarette
Prerequisite: Consent of the instructor. Lectures, reading, and case study critiques from Freud and contemporary psychoanalysis; an introduction to the principal conceptions for the student of philosophy and of the arts and humanities in general.

183 • Beginning Modern Logic (4) Dauer, Ketchum
Prerequisite: See NOTE under Upper Division courses. Open to Lower Division students with the consent of the instructor. An introduction to the concepts and methods of modern symbolic logic. Emphasis is placed on problems of translating English expressions into logical symbols and on the development of skills in using the formal proof procedures of sentential and predicate logic.

184 • Intermediate Modern Logic (4) Dauer, Ketchum
Prerequisite: Philosophy/183 or equivalent, or consent of the instructor. Further application and development of the predicate calculus, including the calculi of identity and description. An introduction to the metalogical questions of completeness, consistency, and decidability.

185 • Advanced Modern Logic (4) Dauer
Prerequisite: Philosophy/183 and 184 or equivalent, or consent of the instructor. Topics from the theory of formal systems, set theory, recursive function theory, and automata theory.

187 • Philosophy of Mathematics (4) Staff
Prerequisite: Philosophy/183 or equivalent, or consent of the instructor. Logistic, formalist, and intuitionist views of the nature of mathematics. Epistemological problems of applied mathematics.

188 • Theory of Value (4) Wilkins
Prerequisite: See NOTE under Upper Division courses.

192 • Philosophy of Law (4) Fingarette
Prerequisite: Philosophy/104 or consent of the instructor. An introduction to some of the main issues generated by the philosophical question "What is law?" 1. In what sense is conduct made obligatory by the existence of law? 2. What, if any, is the relationship between law and morals? 3. What are rules? What does it mean to say that a rule exists? Do courts really apply rules or merely pretend to do so?

193 • Punishment and Responsibility (4) Staff
Prerequisite: At least one course in philosophy or consent of the instructor. An examination of some of the philosophical problems relevant to the practice of punishment and determinations of responsibility: the rationale of the practice of punishment and the legal doctrine of *mens rea*; the analysis of specific conditions of responsibility ('acts of will', intention, and negligence); the claim that the criminal law could and should dispense with mental conditions of responsibility; the distinctions and relations between the meanings of 'punishment', 'responsibility', 'retribution', 'guilt', 'shame', etc.

194 • Group Studies in Philosophy (4) Staff
Prerequisite: Upper Division standing in philosophy and consent of instructor. Enrollment normally limited to twelve or fewer students. Course may be repeated for credit up to eight units.

195 • Advanced Seminar in Classical Philosophy (4) Stough, Ketchum
Prerequisite: At least two Upper Division courses in philosophy. Admission by interview with instructor only. Intensive reading and discussion of the texts of individual Greek philosophers. Specifics will be available in Departmental Course List.

196 • Senior Honors Seminar (4) Staff
Enrollment limited to senior Philosophy majors, by invitation of instructor. A discussion course centered around a single topic or problem to be announced in advance by the instructor.

197A—B • Senior Honors Thesis (2,2) Staff
Enrollment limited to senior Philosophy majors; by consent of instructor. A research and writing tutorial designed for senior honors majors. The first term will be spent mainly in selecting and researching a topic for the thesis. The second term will be spent mainly in the writing of the thesis.

***199 • Independent Studies in Philosophy** (1-5) Staff
Prerequisite: Upper Division standing and instructor approval. Students who are eligible may take Independent Studies for one-five units per quarter. A written statement of the proposed program of study must be presented to the instructor for his approval before the student signs up for the course. An Independent Studies Course card must be filed with student's packet.

Graduate courses

200 • Introductory Graduate Seminar (6) Staff
Required of, and open only to, beginning graduate students as an introduction to graduate study in this Department. The content varies from year to year but shall always be a major topic or figure. Extensive writing will be required.

NOTE: Graduate standing is prerequisite for all graduate courses. All graduate seminars (with the exception of Philosophy/200) may be repeated with consent of the instructor, and may be taken for one to four units of work as determined by consultation with the instructor.

251 • Seminar in Metaphysics (1-4) Staff

253 • Seminar in the Philosophy of Language (1-4) Staff

254 • Seminar in Ethics (1-4) Staff

255 • Seminar in the Philosophy of the Social Sciences (1-4) Staff

256 • Seminar in Epistemology (1-4) Staff

257 • Seminar in the Philosophy of History (1-4) Staff

260 • Problems in Legal and Political Philosophy (1-4) Staff

262 • Seminar in the Philosophy of Mind (1-4) Staff

264 • Seminar in the Philosophy of Science (1-4) Staff

270 • Seminar in the History of Philosophy (1-4) Staff

280 • Seminar — Contemporary Figures in Philosophy (1-4) Staff

284 • Seminar in the Philosophy of Mathematics (1-4) Staff

286 • Seminar in the Philosophy of Logic (1-4) Staff

594 • Special Topics (1-4) Staff
Prerequisite: Consent of the instructor. Special seminar on research subjects of current interest.

596 • Directed Reading and Research (1-4) Staff
Prerequisite: Consent of the instructor. A written proposal must be approved by the instructor and Department Chairman and filed with the Graduate Division.

597 • Individual Study for Master's and/or Ph.D. Examinations for Advancement to Candidacy (1-12) Staff

598 • Master's Thesis Research and Preparation (1-12) Staff

599 • Ph.D. Dissertation Preparation (1-12) Staff

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*See L-2 for 198/199 independent studies unit limitations.

Physical Activities

Supervisors

Ernest N. Carter, Ed. D., UCLA *(Emeritus).*
Arthur J. Gallon, Ed. D., Berkeley.
Willard M. Hammer, Ed. D., Oregon.
Mayville S. Kelliher, Ed, D., Oregon *(Emeritus).*
Wilton M. Wilton, Ed. D., UCLA *(Emeritus).*

Associate Supervisors

Arthur J. Aldritt, M.A., Berkeley.
Newell D. Breyfogle, M.A., Iowa.

F. Patricia Stock, M.S., Fresno State.
Zoltan von Somogyi, Master Coach Soccer and Fencing, Royal Academy of Physical Education, Budapest, Hungary.

Assistant Supervisors

Nancy L. P. Button, M.A., Berkeley.
Sherman G. Button, Ph.D., Utah.

Sharon L. Evans, M.F.A., Utah.
Bobbi L. Parrish, M.S., San Jose State.
Andrew L. Hill, B.A., Westmont.

Junior Supervisors

Christine Accornero, M.S., UCLA.

Barbara J. Bonace, M.A., UCSB.

Lecturers

Douglas J. Rex, B.A., UCSB.
Samuel Adams, M.A., UCSB.
Ralph R. Barkey, M.A., UCSB.
Danti R. Dettamanti, M.S., UCLA.
John L. Griffin, B.A., Fresno State.
David F. Gorrie, M.S., USC.
Albert Negratti, Ed. D., Portland, Director of Athletics.
Kenji K. Ota, Black Belt, Aiki Kai School, Los Angeles.

Concerns of the department

The Department of Physical Activities offers to the general student body courses designed to contribute to the development and maintenance of physical fitness, recreational skills for use in leisure time and professional courses leading to the Athletic Coaching Minor Certificate.

Courses may be taken only once for credit. No more than 6 units of Physical Activities/1—courses may be counted toward degree requirements. A physical examination performed by your private physician will be reviewed by the Student Health Service.

Fines are imposed for each formal transaction necessitated by failure of the student to comply with the regulations of the department: (a) failure to return equipment, or clothing, on or before the date posted for such return at the end of each quarter; (b) failure to close out lockers at the end of each quarter ($5.00).

Teaching credentials

The Department of Physical Activities offers a program in Athletic Coaching consisting of 30 units. A bachelor's degree is not available in this subject. This program is primarily designed for those interested in coaching at the secondary or community college level. The basic core requirement consists of 19-21 units. The remaining units are selected from Physical Activities offerings with direction from the Coaching Adviser. Students desiring to enroll in this program must consult with the department counselor prior to enrolling in classes.

Preparation for this program: Recommended are a course in Psychology and in Speech.

Required core courses: PA/130A—B, 149, 150, 170 series (two courses), 180 and/or 392.

Consult with department counselor about elective courses.

Specific details of State of California and University of California requirements for the credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

Department of Physical Activities, University of California, Santa Barbara, California 93106 Phone: (805) 961-2183

Physical Activities for men and women

Lower Division courses

Fundamental Sports Activities The physical activities listed below are designed to provide a basic program by which students may improve their physical condition, secure useful neuro-muscular development, and gain recreational skills. The letter A indicates elementary level; B, intermediate level; and C, advanced level. Permission to take the intermediate and advanced courses without having previously completed the elementary course must be received from the Department of Physical Activities. Classes meet two periods weekly and provide instruction and supervised practice in the fundamentals of each activity. A course may be taken only once for credit.

1—1 • Developmental activities (½)
A course providing particular emphasis on physical conditioning and reconditioning after injury designed especially for students participating in various intercollegiate sports activities.

***1—2A—B—C—D • Intercollegiate baseball** (½)

1—3A—B—C • Archery (½)

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*Course open to men only.

1—4A—B—C • Badminton (½)

***1—5A—B—C • Baseball** (½)

1—6A—B—C • Basketball (½)

[$]1—7A—B—C • Boating and sailing (½)

°1—8A—B—C • Body toning and conditioning for women (½)
A course designed to provide students with the opportunity to improve their basic physical condition, acquire useful neuromuscular development, and gain recreational skills. (This course is open to women only.)

[$]1—9A—B—C • Bowling (½)

***1—10A—B—C • Boxing** (½)

1—11A—B—C—D • Intercollegiate basketball (½)
Separate sections for men & women.

1—12A—B—C • Judo (½)
A course designed to provide students with the opportunity to improve their basic physical condition, learn useful neuromuscular development, and Martial arts skills.

***1—13A—B—C • Saber Fencing** (½)

***1—14A—B—C—D • Intercollegiate Cross Country** (½)

1—15A—B—C—D • Modern Dance (½)

1—16A—B—C • Folk Dance (½)

1—17A—B—C • Social Dance (½)

1—18A—B—C • Foil fencing (½)

1—20 • Field hockey (½)

*** 1—22A—B—C—D • Intercollegiate golf** (½)

1—23A—B—C—D • Intercollegiate gymnastics (½)
Separate sections for men and women.

1—24A • Golf (½)

***1—24B—C • Golf** (½)

1—25A—B—C • Tumbling and free exercise
Affords a basic background for the sport of Gymnastics with a working knowledge of tumbling skills progressing from basic mat somersaults, kips, balances, etc., to intermediate and advanced routines as used in both the men's and women's competitive tumbling and free exercise events.

1—26A—B—C • Gymnastics apparatus (½)
Offers basic, intermediate and advanced instruction for both men and women in all Olympic Events except for Free Exercise. Step by step progressions leading to competitive style routines are taught for each of the three ability levels.

1—27A—B—C • Trampoline (½)
27A • Basic (bounces, landings, positions somersaults)
27B • Intermediate (consecutive somersaults, twists, routines)
27C • Advanced (multiple somersaults and twists, diphisis, and routines;. Gymnastic skills pertaining only to the trampoline event.

°1—29A—B—C • Exercise and figure control (½)

1—30A—B—C • Soccer (½)

1—31A—B—C • Softball (½)

1—32A—B—C • Karate (½)

1—33A—B—C—D • Intercollegiate swimming (½)
Separate sections for men & women during season of sport.

1—34A—B—C • Swimming (½)

1—35A—B—C • Synchronized swimming (½)

1—36 • Jogging Fitness (½)
(a) Jogging (majority of work), (b) Stair running, (c) Indoor and outdoor apparatus, (d) Information on various methods of obtaining cardiovascular fitness: long slow distance, interval training, and repetition training.

1—37A—B—C—D • Intercollegiate tennis (½)
Separate sections for men & women.

1—38A—B—C • Tennis (½)

1—39A • Elementary track and field (½)

1—40A—B—C • Volleyball (½)

1—41A—B—C • Water polo (½)

1—42A—B—C—D • Intercollegiate track and field (½)

*** 1—43A—B—C—D • M Weight training** (½)

*** 1—44A—B—C • Wrestling** (½)

*** 1—45A—B—C—D • Intercollegiate water polo** (½)

*** 1—46A—B—C—D • Intercollegiate wrestling** (½)

*** 1—47A—B—C—D • Intercollegiate volleyball** (½)
Separate sections for men & women during season of sport.

*** 1—48A—B—C—D • Intercollegiate soccer** (½)

1—49A—B—C • Springboard diving (½)

1—51A—B—C—D • Intercollegiate sailing (½)
To provide an extension of the Department of Physical Activities' Sailing classes, and an opportunity for qualified students to engage in a competitive Sailing program.

1—52A—B—C—D • Intercollegiate fencing (½)
A class to teach the techniques and skills at a high level required of competitive fencers. A normal progression from the Department of Physical Activities' PA/1—13 • Sabre and PA/1—18 • Foil classes.

1—99 • Lifetime activities interest class (½)
Prerequisites: Consent of instructor, completion of A—B—C levels of related course and potential benefit to student. Pre-enrollment not permitted. This class makes it possible for a student to take instruction beyond the elementary, intermediate and advanced levels of any physical activity 1—class. Enrollment not to exceed one section of 1-99 per quarter.

°4A—B—C • Life fitness for women (1,5) The Staff
A course designed for women directed toward attaining physical fitness through an understanding and participation in an effective program of physical activities which can be continued throughout life. Stress will be placed on activities that contribute toward total health.

5A • First aid and personal safety (2) Staff
A course designed to provide the knowledge and ability to give immediate and temporary care to victims of an accident, or sudden illness, until the services of a physician can be obtained.

Successful completion of the course may lead to the Standard Red Cross Certificate.

°6A—B • Personal defense for women (1.5) Stock
Course presents situations in which a college woman would need to apply self-defense techniques, emphasizes "rules of avoidance and safety." Basic skills needed for self-defense will be included in the course.

7A—B—C • Life fitness for men (1.5) Staff
A course designed for men directed toward attaining a basic understanding of bodily functions as they relate to exercise and increasing physical fitness through controlled activities.

30A—B—C • Appreciation of sports (2) Staff
Lecture, demonstrations, and selected learning experiences for the general university student leading to an understanding and appreciation of athletics and recreational sports.

32A • Principles of Officiating (2) Staff
The principles, ethics and standards of officiating Fall team and individual sports.

32B • Principles of officiating (2) Staff
The principles, ethics and standards of officiating Winter team and individual sports.

°32C • Principles of officiating (2) Accornero
A course open to women and leads to securing women's volleyball and basketball certification.

32D • Principles of officiating (2) Staff
Principles, ethics and standards of officiating Spring team and individual sports.

48 • Lifesaving (1) Staff
One lecture and one pool period per week. May lead to American Red Cross senior lifesaving certificate.

49A • Elementary Water Safety (1) Staff
Prerequisite: PA/48A, or current American Red Cross Senior Lifesaving Certificate. The course provides an opportunity for individuals to analyze and perform all swimming skills related to personal safety, self-rescue techniques, and small craft safety factors. Satisfactory completion of the course is a prerequisite for PA/49B.

49B • Intermediate water safety (1) Staff
Prerequisite: PA/49A. The course provides an opportunity for individuals to learn the theory and practice application of methods to organize and present aquatic materials. Satisfactory completion of the course may lead to the American Red Cross Water Safety Instructor's Certificate.

Upper Division courses

101 • Methods of conditioning in athletics (3) Mr. Button
Coaching Minor candidate recommended. A course designed to present current methods and concepts of athletic training and conditioning. Emphasis is placed on fitness training programs, conditioning and progressive weight training specific to sports. Basic concepts for guiding train-

*Course open to men only.
[$] A fee is charged for use of equipment and facilities not owned by the University. Direct payment will be made by the student.
°Course open to women only.

ing, conditioning, diet and nutrition in athletics are examined.

130A • Foundations of athletics — problems related to athletics (3) Gallon
Prerequisites: Coaching Minor student with senior standing and consent of instructor. An introduction to basic problems concerned with the management, administration and organization of interscholastic athletic programs. particular emphasis is placed on programs as conducted under the jurisdiction of the California Interscholastic Federation. A COACHING MINOR REQUIRED COURSE.

130C • Foundation of athletics — problems related to sports psychology (3) Hammer
Prerequisites: Coaching Minor student with senior standing and consent of the instructor. The application of data from psychological and related fields as it specifically applies to athletics, coaches, and sports activities. Principles and problems of coaching are examined. Human factors of performance, personality, motivation, learning and stress are presented. A COACHING MINOR REQUIRED COURSE.

130D • Foundation of athletics — problems related to sports and society Negratti
Prerequisites: Coaching Minor, and consent of the instructor. A course designed to explore the problems relative to sport and society as they affect athletic participation and coaching.

136 • Fundamental physical activities in Elementary School Programs (3) Bonace
An analysis of the physical activities and progression in motor skills and activities for the elementary school program. This class satisfies a prerequisite for admission to Graduate School of Education.

149 • Composite sciences for athletic coaching (3)Button
Prerequisites: Coaching Minor Student and consent of instructor. An overview of the essential scientific disciplines, human anatomy, kinesiology, motor learning physiology and mechanical analysis as they apply to athletic coaching. The course is specifically designed for students desiring to coach athletic teams, but who lack a scientific background related to human motion. A COACHING MINOR REQUIRED COURSE.

150 • Medical Aspects of Athletics (3) Staff
Prerequisites: PA/149, consent of instructor. An introduction to the basic concepts and techniques in the prevention, diagnosis, treatment, and rehabilitation of athletic injuries. The practical application for prevention and the therapeutic measures relative to sports activities are examined. A COACHING MINOR REQUIRED COURSE.

163A • Theory of individual and team sports (3) Staff
Prerequisites: Consent of instructor and related PA courses. Techniques of teaching Physical Education fundamental skills in individual and team sports, with emphasis on theoretical and practical application.

163B • Theory of individual and team sports (3) Staff
Prerequisite: 163A, or consent of instructor.

All 170 series, **Techniques of team sports,** the technique of teaching individual and team skills of a variety of team sports and advanced analysis of that sport which is essential to a coach of competitive teams at the interscholastic and college level.
Prerequisite: Related Physical Activities course proficiency, or consent of instructor.

170A • Football (3) Staff

170B • Basketball (3) Barkey and Staff

170C • Baseball (3) Gorrie and Staff

170D • Track and Field (3) Adams and Staff

170E • Water polo (3) Staff

170F • Diving and swimming (3) Staff

170G • Soccer (3) von Somogyi

170H • Gymnastics (3) Aldritt and Button
Separate sections for men and women.

170I • Volleyball (3) Staff

°170J • Women's field sports (3) Staff

170K • Wrestling (2) Hammer

170L • Racquets Sports (2) Staff

170M • Golf (2) Staff

180 • Practicum — physical activities (3) Stock, Gallon
Prerequisite: Registered coaching minor candidates only, and consent of the instructor. Actual experience in the conduct of activity classes, or athletic teams, under the supervision of an experienced instructor, or coach.

***199 • Independent studies in athletic coaching** (1 to 5 units) Staff
Prerequisite: Senior standing and consent of the instructor. Open only to advanced students approved by the Coaching Minor adviser and faculty members involved. 199 credits are limited to no more than 5 in one quarter, and no more than 10 units total.

392 • Student teaching-coaching (3-9 variable) Staff
A course designed to satisfy the California General Secondary Teaching Credential. Available only to students accepted in the School of Education.

°Course open to women only.
*Course open to men only.
*See L-2 for 198/199 independent studies unit limitations.

Physics

Professors

Paul H. Barrett, Ph.D., Berkeley; solid state physics (experimental).
Herbert P. Broida, Ph.D., Harvard; atomic and molecular physics (experimental).
David O. Caldwell, Ph.D., UCLA; high energy physics (experimental).
Robert M. Eisberg, Ph.D., Berkeley; nuclear physics (experimental).
Jose R. Fulco, Ph.D., University of Buenos Aires; High Energy Physics (theoretical).
James B. Hartle, Ph.D., CalTech; general relativity and relativistic astrophysics (theoretical).
Daniel W. Hone, Ph.D., Illinois; solid state physics (theoretical).
Vincent Jaccarino, Ph.D., MIT; solid state physics (experimental).
Harold W. Lewis, Ph.D., Berkeley; theoretical physics.
Raymond F. Sawyer, Ph.D., Harvard; high energy physics and astrophysics (theoretical).
Douglas J. Scalapino, Ph.D., Stanford; solid state physics (theoretical).
Robert L. Sugar, Ph.D., Princeton; high energy physics (theoretical).
William C. Walker, Ph.D., USC; solid state physics (experimental), (Chairman).

Adjunct Professor

Paul H. Lee, A.B., Harvard; quantum optics (experimental).

Associate Professors

Virgil B. Elings, Ph.D., MIT; biomedical physics (experimental).
Leonard H. Hall, Ph.D., Brown; solid state physics (theoretical).
Rollin J. Morrison, Ph.D., Illinois; high energy physics (experimental).
Stanton J. Peale, Ph.D., Cornell; solar system physics and astrophysics.
Glen E. Schrank, Ph.D., UCLA; high energy physics (theoretical).

Assistant Professors

David S. Cannell, Ph.D., MIT; statistical physics (experimental).
Alan M. Eisner, Ph.D., Harvard; high energy physics (experimental).
Paul K. Hansma, Ph.D., Berkeley; low temperature physics (experimental).

Assistant Professors in residence

David J. Benard, Ph.D., Illinois; solid state physics (experimental).
Allan R. King, Ph.D., Berkeley; solid state physics (experimental).
Steven J. Yellin, Ph.D., Cal Tech; high energy physics (experimental).

Lecturers

Douglas A. Brown, Ph.D., Colorado; Biophysics (Experimental)

Concerns of the department

The Department of Physics offers programs leading to either the B.S. or B.A. degree. The B.S. degree is characterized by more required physics courses and fewer electives than the B.A., and it is designed primarily as a rigorous preparation for those students who plan to enter graduate school in physics. The B.A. program is designed to provide a thorough background in physics for those students seeking careers in other fields. The larger number of electives allows students to take more courses which pertain to their special interests. For example, most problems in environmental science and energy utilization require a thorough understanding of physical principles for their formulation and ultimate solution. Other areas of applied physics for which the B.A. degree is excellent preparation include biophysics, geophysics, oceanography, and astronomy. Also, careers in applied math and computer science would be considerably enriched by an understanding of the physical problems for which analytic or numerical solutions are sought.

Bachelor of Science

Students are required to fulfill the General Education Requirements of the College of Letters and Science for the Bachelor of Science degree as specified in G.

Preparation for the major

The following courses should be completed in the first two years: Physics/8A—B—C, 8AL—BL—CL, 8A—B—C, 5, 7C, Math/3A—B—C, 5A—B—C, Chemistry/1A—B—C, 1AL—BL—CL for a total of 60 units. Students transferring to Physics from other disciplines may substitute Physics/7A—B—C or Physics 6A—B—C for Physics 8A—B—C, but only with explicit Department approval.

Suggested course schedule for freshmen in the Physics Bachelor of Science or Bachelor of Arts program

First Quarter		Second Quarter		Third Quarter	
Units	Course	Units	Course	Units	Course
5	Physics/8A, 8AL	5	Physics/8B, 8BL	5	Physics/8C, 8CL
1	Physics/9A	1	Physics/9B	1	Physics/9C
4	Math/3A	4	Math/3B	4	Math/3C
4	English/1A	4	English/1B	3	Chem/1C
3	Chem/1A	3	Chem/1B	1	Chem/1CL
1	Chem/1AL	1	Chem/1BL	3-4	Electives
18		18		17-18	

Upper Division major

The minimum requirements for the B.S. degree in Physics include Physics/105 A—B, 110 A—B—C, 115 A—B—C, 6 units of Upper Division Physics laboratory (at least 4 units of laboratory *other* than 127 A—B—C is required), 8 units of Upper Division physics electives and Math/124 A—B—C or the equivalent for a total of 55 units of Upper Division major courses. Forty units of general education courses and 25 units of additional electives bring total requirements to 180 units. To ensure that the student is able to plan a program to suit individual needs, the Physics Department Chairman will assign a faculty adviser to each student at the start of the freshman year and will require that the student meet with the adviser to plan a major program. Transfer students will be assigned an adviser upon entry and should consult that person at the earliest possible time.

Bachelor of Arts

Students are required to fulfill the General Education Requirements of the College of Letters and Science for the Bachelor of Science degree as specified in G.

Preparation for the major

The following courses should be completed during the first two years: 8 A—B—C, 8 AL—BL—CL, 9 A—B—C, 5, Math/3 A—B—C, 5 A—B—C, Chemistry/1 A—B—C, 1 AL—BL—CL for a total of 57 units. Students transferring to Physics from other disciplines may substitute Physics/6 A—B—C or 7 A—B—C for Physics/8 A—B—C, but only with explicit Department approval.

Upper Division major

The minimum requirements for the B.A. degree are 24 units of Upper Division physics courses, 6 units of Upper Division laboratory (at least one quarter of laboratory *other* than Physics/127 A—B—C is required) and 12 units of approved math, science or engineering electives for a total of 42 units of Upper Division major courses. Forty units of general education courses and 41 units of addition electives bring the total requirements to 180 units. To ensure that the student is able to plan a program to suit individual needs, the Physics Department Chairman will assign a faculty adviser to each student at the start of the freshman year and will require that the student meet with the adviser to plan a major program. Transfer students will be assigned an adviser upon entry and should consult that person at the earliest possible time.

Cooperative program — Physics and Nuclear Engineering

For physics students who are interested in an industrial career, one option which may be of interest is a five-year program leading to a B.A. or B.S. degree in Physics and a B.S. degree in Nuclear Engineering. Students may obtain details of the program from the Department of Physics or the Department of Chemical and Nuclear Engineering. Students are advised to consider applying for simultaneous registration in the Colleges of Letters and Science and Engineering in order to complete the degree programs in both Physics and Engineering.

Graduate program

The Department offers work leading to the Ph.D., M.A. degrees in physics, and an M.S. degree in Scientific Instrumentation. A candidate for admission to the Ph.D. and M.A. programs must present an undergraduate major in physics, or its equivalent and scores of the Graduate Record Examination (Verbal, Quantitative, and the Advanced Test in Physics). A candidate for admission to the Scientific Instrumentation program must present an undergraduate major in natural sciences or engineering,or its equivalent.

Entering students in the M.A. and Ph.D. programs will be appraised by means of examination during registration week; where necessary, supplementary courses will be required.

Master of Arts

Requirements

Completion of 36 quarter units of course work, selected with the approval of the Departmental Graduate Adviser. A minimum of 24 units must be in graduate courses (200 series) in physics, the remainder may be selected from Upper Division or Graduate courses in mathematics, chemistry, engineering or physics.

The student must demonstrate a satisfactory level of teaching proficiency in undergraduate physics courses. Normally three quarters are required to satisfy this requirement.

The student must demonstrate proficiency in Fortran or a comparable computer language.

Completion of a comprehensive examination.

Master of Science — Scientific Instrumentation

Requirements

Completion of 36 quarter units of course work, which must include Physics/240A—B—C, 246A—B—C, 247, 248A—B—C and 6 units of related directed studies. The remainder may be selected from Upper Division or Graduate courses in any approved department.

There is no language requirement for this degree.

Satisfactory completion of an oral examination covering the student's course work and project.

Doctor of Philosophy

Requirements

Completion of a set of comprehensive graduate qualifying examinations covering the major fields of physics is required prior to Advancement to Candidacy.

The student must demonstrate a satisfactory level of teaching proficiency in undergraduate physics courses or other courses at the discretion of the CHAIRMAN. Normally three quarters are required to satisfy this requirement.

The student must demonstrate proficiency in Fortran or a comparable computer language.

The final requirement is the completion and oral defense of a doctoral dissertation.

Career opportunities

Physics is the most basic of the sciences. Its strong emphasis on fundamental concepts and problem solving makes physics one of the most versatile majors available. The physics major provides the basis for careers in basic and applied physics and in interdisciplinary areas such as Astronomy, Biophysics, Environmental Science, Oceanography, and Scientific Instrumentation. The physics major can also provide an excellent premedical education. Career information can be obtained at the Physics Department office or from the American Institute of Physics, 335 East 45th St., New York, N.Y. 10017.

Teaching credentials

Students who complete a major in physics may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Contact the Physics department office for details.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Department of Physics, University of California, Santa Barbara, California 93106 Phone: (805) 961-3888

Astronomy

Lower Division Courses

1 • Basic Astronomy (4) Sawyer
A survey of the development of astronomy with an emphasis on understanding the observable properties of the solar system, the sun and other stars, our own and other galaxies, and the entire universe. Topics of current interest will be discussed as time permits.

2 • History of the Universe (4) Peale
Prerequisite: Astronomy/1. The large scale structure of the universe, its origin, and evolution. The birth of the sun and the planets and their subsequent evolution. The conditions necessary for life elsewhere in the universe and the probabilities of its existence and detection.

Natural Science

Lower Division course

Contemporary Natural Science • (see Natural Science/1A—B—C) (4,4,4) Staff

Physics

Lower Division Courses

5 • Thermodynamics and Kinetic Theory (4) Hall
Prerequisites: Physics/8A—B—C, Mathematics/5A to be taken concurrently. Thermodynamics: Three laws of thermodynamics, phase diagrams, entropy, equipartition of energy, specific heat, reversible and irreversible processes. Kinetic theory: Maxwell-Boltzmann distribution, pressure, viscosity, thermal conductivity, diffusion.

6A—B—C • Physics for Biological Scientists (3,3,3) Eisner
Prerequisite: One quarter of calculus (may be taken concurrently). Classical mechanics, electricity and magnetism, optics, thermodynamics, modern physics; atoms, molecules, nuclei, and solids.

6AL—BL—CL • Experimental Physics for Biological Scientists (1,1,1) Staff
Prerequisite: Concurrent registration in 6A—B—C, or consent of the instructor. Experiments in: the mechanical, electrical and thermal properties of matter, the behavior of light and quantum phenomena with application to the biological sciences.

7A—B—C • Physics for Engineers (4,3,3) Walker
Prerequisites: One year of college calculus and Mechanical Engineering/10.
A • Electricity and magnetism
B • Electromagnetic waves; physical and geometric optics; acoustics
C • Modern physics; quantum mechanics; atomic, solid state and nuclear physics

7BL—CL • Experimental Physics for Engineers (1,1) Staff
Prerequisite: Concurrent registration in 7B—C. Experiments in: electric and magnetic deflection of electrons, use of the oscilloscope, electrical-mechanical analogs, microwaves, quantum effects and radioactivity.

8A—B—C • Physics for Science Majors (4,4,4) Scalapino
Classical mechanics — Kinematics, Newton's laws, motion of a particle and systems of particles, conservation laws, simple harmonic motion, rotational motion, gravitational fields. Electricity and magnetism — Electro and magnetostatics, currents, simple circuits, Coulomb's law, Gauss's law, Ampere's law, Faraday's law. Waves and optics — elastic waves, sound and light, geometrical and physical optics, diffraction and interference.

8AL—BL—CL • Experimental Physics for Science Majors (1,1,1) Staff
Prerequisite: Concurrent registration in 8A—B—C. Experiments in: mechanical conservation laws, dynamics of moving bodies, use of the oscilloscope, deflection of electrons, electrical-mechanical analogs, microwave transmission and diffraction, optics.

9A—B—C • Problems in Physics (1,1,1) Staff
A supplemental, enrichment course to accompany Physics 8ABC. Problem solving techniques in physics and conceptual under standing of basic physics principles will be emphasized. P/NP grading required. Limited to Physics majors only.

10 • Concepts of Physics (4) Barrett
Prerequisite: Not open for degree credit to students who have completed Natural Science/1A. A survey of important concepts in physics for the non-science major. The contents will vary depending on the interests of the students and instructor.

11 • Physics of Sound (4) Hall
Introduction to the physics of sound; elementary mechanics, harmonic motion, and waves; acoustics of speech and hearing; physics, of musical instruments.

Upper Division courses

100 • The Impact of Science and Technology on Society (3) Broida
A collaboration by members of the various science departments. Lectures and panel discussions. 1) Examination of selected scientific problems of relevance to society. 2) Discussion of: (a) the organization and control of scientific research, (b) scientific advice to the government, (c) science in the university.

105A—B • Classical Mechanics (4,4) Morrison
Prerequisites: Physics/7C or 8C and concurrent registration in Mathematics/5B, or its equivalent. Dynamics of point particles, conservation laws, motion of rigid bodies, Lagrangian formulation of mechanics, small vibrations and normal modes.

110A—B—C • Electromagnetism (4,4,4) Cannell
Prerequisites: Physics/7C or 8C and Mathematics/5C. Electrostatics, magnetostatics, electric and magnetic properties of materials, Maxwell's equations, electromagnetic waves, radiation from charged particles, special relativity.

115A • Elementary Quantum Mechanics and Applications (4) Caldwell
Prerequisites: Physics/8C and Mathematics/124A (may be taken concurrently) or equivalent. Failures of classical physics and quantum mechanical resolutions. Schroedinger's equation, solutions for one-dimensional systems, one-electron atoms, angular momentum.

115B • Elementary Quantum Mechanics and Applications (4) Caldwell
Prerequisites, Physics/115A. Spin, emission and absorption of radiation, identical particles, multi-electron atoms, solids, solid state electronic devices, lasers.

115C • Formal Theory of Quantum Mechanics (4) Hansma
Prerequisites: Physics/115B and Mathematics/124B. Matrix formulation, perturbation and other approximation methods, scattering.

115AB—BG • Elementary Quantum Mechanics and Applications (4,4) Staff
Same description as 115A—B. Open only by consent of the Physics Graduate Advisor to graduate students who have not taken 115AB, or the respective part thereof in this institution.

115CG • Formal Theory of Quantum Mechanics (4) Staff
Same description as 115C. Open only by consent of the Physics Graduate Advisor to graduate students who have not taken 115C, or the respective part thereof in this institution.

116A • Elementary Quantum Mechanics (4) Eisberg
Prerequisite: Physics/7C or 8C. Failures of classical physics and quantum mechanical resolutions, key experiments, the basic principles of quantum mechanics, the Schrodinger equation, angular momentum and spin, exclusion principle.

116B • Modern Applications of Quantum Mechanics (4) Eisberg
Prerequisite: Physics/116A or consent of instructor. The application of quantum mechanics to the study of spectroscopy, solid state physics, solid state electronic devices, lasers and holography, nuclear magnetic resonance, superconductivity.

116C • Nuclei and Elementary Particles (4) Eisberg
Prerequisite: Physics/116A or consent of instructor. Nuclear models, nuclear decay and nuclear reactions, elementary particles, the symmetries and conservation laws of physics.

117 • Nuclear Physics for Engineers (4) Caldwell
Prerequisite: Physics/116A or consent of instructor. Nuclear models, fundamentals of nuclear fission, plasmas, electromagnetic containment of charged particles, nuclear fusion, nuclear radiation, radiation shielding, interaction of charged particles with matter biological effects of radiation.

119 • Statistical Mechanics and Thermodynamics (4) Jaccarino
Prerequisite: Physics/7C or 8C. Kinetic theory of statistical ensembles. Boltzmann, Fermi-Dirac and Bose-Einstein distribution laws. Relation of thermodynamic variables and microscopic properties.

123 • Solid State Physics (4) Jaccarino
Prerequisite: Physics/115A. Classification of solids, crystal symmetry, lattice dynamics, thermal, electric and magnetic properties of solids; band theory of electronic states, imperfections, superconductivity.

123G • Solid State Physics (4) Staff
Classification of solids, crystal symmetry, lattice dynamics, thermal, electric and magnetic properties of solids; band theory of electronic states, imperfections, superconductivity. Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 123.

124 • Nuclear Physics (4) Morrison
Prerequisite: Physics/115B. Properties of stable nuclei. Nu-

clear models. Nuclear decay and nuclear reactions, including fusion and fission.

125 • Elementary Particle Physics (4) Caldwell
Prerequisite: Physics/115B. Phenomenology of the particles of high energy physics and their strong, electronmagnetic, and weak interactions. Fundamental symmetries, invariance principles, and the associated quantum numbers.

126 • Plasma Physics (4) Lewis
Prerequisite: Physics/110A—B—C. Introduction to the physics of the fully ionized gas. Motion of charged particles in electric and magnetic fields, magnetohydrodynamics, equilibrium plasma configurations and their stability, waves in plasmas. Examples selected from the space and astrophysical sciences and controlled fusion research.

126G • Plasma Physics (4) Lewis
Introduction to the physics of the fully ionized gas. Motion of charged particles in electric and magnetic fields, magnetohydrodynamics, equilibrium plasma configurations and their stability, waves in plasmas. Examples selected from the space and astrophysical sciences and controlled fusion research. Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 126.

127A—B • Electronics for Science Majors (3-3) Hansma
Prerequisites: Six units of calculus and six units of physics. Circuit theory, semiconductor device characteristics, feedback amplifiers, oscillators, analog computers, operational amplifiers, digital and logic circuits, integrated circuits, fast pulse technique.

128L • 129L • 130L • Advanced Experimental Physics (2-4 per quarter) King
Prerequisite: Upper Division standing in physics. Selected experiments in contemporary physics, e.g., holography; laser light scattering; optical pumping; semiconductors; superconductivity; magnetic resonance; Mossbauer effect; beta and gamma ray spectroscopy; nuclear counting techniques.

133 • Astrophysics (4) Peale
Topics will vary with the instructor, e.g., stellar structure and evolution, origin of the elements, formation of planets, introductory cosmology, neutron stars or other topics of particular interest to the instructor and students.

133G • Astrophysics (4) Peale
Topics will vary with the instructor, e.g., stellar structure and evolution, origin of the elements, formation of planets, introductory cosmology, neutron stars or other topics of particular interest to the instructor and students. Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 133.

141 • Optics (4) Walker
Modern geometrical and physical optics. Polarization, coherence, interference and diffraction phenomena. Fourier transform spectroscopy, intensity correlation interferometry, spatial filtering and holography. Selected topics on lasers, light scattering and quantum optics as time permits.

141G • Optics (4) Walker
Modern geometrical and physical optics. Polarization, coherence, interference and diffraction phenomena. Fourier transform spectroscopy, intensity correlation interlerometry, spatial filtering and holography. Selected topics on lasers, light scattering and quantum optics as time permits. Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 141.

142L • Experimental Research in Molecular and Solar State Physics (2) Broida
Prerequisites: Physics/7C or 8C and consent of instructor. This course offers qualified undergraduates the opportunity to work in research laboratories assisting the faculty and graduate students in experimental research in molecular and solid state physics. May be repeated for credit up to six units.

143L • Experimental Research in Nuclear and Elementary Particle Physics (2) Elings
Prerequisites: Physics/5, 7C or 8C, and consent of the instructor. This course offers qualified undergraduates the opportunity to work in research laboratories assisting the faculty and graduate students in experimental research in nuclear and elementary particle physics. May be repeated for credit up to six units.

***198 • Directed Reading** (1-4) Staff
Prerequisite: Consent of the instructor. Each staff member has his own directed reading course identified by the same number code as the 599 series.

***199 • Independent Studies in Physics** (1-5) Staff
Prerequisite: Consent of the instructor. Directed individual study open to qualified seniors in the Department. 199 courses are limited to no more than five units in one quarter and no more than 12 units total. Each staff member has his own independent studies course identified by the same number code as the 599 series.

Graduate courses

200A—B—C • Mathematical Methods of Physics (3,3,3) Fulco
Mathematical techniques useful in physics, including the theory of functions of a complex variable, linear vector spaces, Fourier transforms, tensor analysis, elementary group theory, partial differential equations of physics, boundary value problems and integral equations.

205 • Classical Mechanics (3) Schrank
Derivation of Lagrange, Hamilton, and Hamilton-Jacobi equations. Development of variational principles. Application of these equations to problems involving two bodies, rigid bodies, small oscillations and classical perturbation theory.

206 • Mechanics of Continuous Media (3) Lewis
Prerequisite: Physics/205. Dynamics of incompressible and compressible fluids. Supersonic and hypersonic flow, shockwaves. Viscosity. Elasticity.

210A—B—C • Electromagnetic Theory (3,3,3) Sugar
Electrostatics, magnetostatics, boundary value problems, time varying fields, Maxwell's equations, electromagnetic radiation, multipole fields, scattering, relativistic particle dynamics.

215A—B—C—D • Quantum Mechanics (3,3,3,3) Sugar
Fundamental principles; Schrodinger equation; angular momentum; perturbation theory; scattering theory; emission and absorption of radiation; applications to atomic, molecular and nuclear systems; Dirac equation.

217A • Advanced Quantum Mechanics (3) Sawyer
Prerequisite: Physics/215B. Introduction to quantum field theory. Second quantization of non-relativistic and relativistic fields. Applications to many body and fundamental particle problems.

217B • Advanced Quantum Mechanics (3) Fulco
Prerequisite: Physics/217A. Relativistic quantum field theory; perturbation theory; applications to quantum electrodynamics.

217C • Advanced Quantum Mechanics (3) Fulco
Prerequisite: Physics/217B. Theory of high energy particles; the content will vary. Possible topics are: strong interaction dynamics, weak interactions, particle symmetries, scattering at very high energies.

219 • Statistical Mechanics (3) Hone
Prerequisites: Physics/205 and 215A. Classical and quantum statistics, ensembles, entropy, H-theorem. Transport properties, critical phenomena, cluster techniques. Applications.

223A—B • Solid State Physics (3,3) Hone
Prerequisite for 223A: Physics/215A. Prerequisite for 223B: Physics/215B. Phenomenology and theory of the solid state. Symmetry, crystals, phonons, and band theory of metals. Transport properties and optical, magnetic, thermal, and dielectric properties. Low temperature properties, including superconductivity. Excitons, quasiparticles, and introduction to many-body theory.

224 • Nuclear Physics (3) Sugar
Prerequisite: Physics/215B. Nuclear forces. Nuclear models. Nuclear reactions and decay.

225 • Elementary Particle Physics (4) Morrison
Phenomenology of the particles of high energy physics and their strong, electromagnetic, and weak interactions. Fundamental symmetries, invariance principles, and the associated quantum numbers.

226A—B • Physics of Plasmas (3-3) Lewis
Prerequisite: Physics/210C. Elementary interactions in plasmas, plasma kinetics, transport properties, plasma oscillations, magnetohydrodynamics, and magnetohydrodynamic waves.

227A • Principles of Magnetic Resonance (3) Jaccarino
Prerequisite: Physics/215A, or consent of the instructor. Elements of the theory of magnetic resonance. The Bloch equations, macroscopic aspects of spin magnetism, interacting spin systems, relaxation phenomena and the method of moments. Hyperfine interactions in atoms and solids. Nuclear and electron spin resonance. Ferro- and antiferromagnetic resonance.

231A—B • General Relativity and Relativistic Astrophysics (4,4) Hartle
Prerequisite: Physics/210 A—B. The principle of equivalence, gravity as geometry, the differential geometry of curved space-time, Einstein's equations, the relativistic stars, gravitational collapse, black holes, observational and theoretical cosmology, gravitational radiation, alternatives to general relativity.

240A—B—C • Instrumentation Seminar (3,3,3) Elings
A seminar course consisting of a series of lectures by the staff and visiting lecturers on the basic principles of scientific instrumentation and student presentations of proposed solutions of instrumentation problems. A forum for student discussion of their research.

246A—B—C • Laboratory of Instrumentation (2,2,2) Elings
Students participate in the design and construction of instruments to be used in laboratories in various departments on campus. In this course the students become involved in instrumentation problems in the scientific areas of their choice.

247 • Research Project in Instrumentation (1-3) Elings
Prerequisite: Physics/246C. From his experience in 246, the student will select one of the cooperating research groups

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*See L-2 198/199 independent studies unit limitations.

using instrumentation on the campus and will design and construct an instrument or system to be used by the selected research group.

248A—B—C • Instrumentation Electronics (2,2,2) Bernard
A practical introduction to laboratory use of circuit analysis, discrete semiconductor devices, analog integrated circuits, signal averaging, sensors and transducers, digital integrated circuits, digital systems, small computers, digital interfaces, data recording systems.

250 • Advanced Topics in Astrophysics (3) Staff
Prerequisite: Consent of the instructor. The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

251 • Advanced Topics in High Energy Physics (3) Staff
Prerequisite: Consent of the instructor. The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

252 • Advanced Topics in Solid State Physics (3) Staff
Prerequisite: Consent of the instructor. The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

253 • Advanced Topics in Optics and Spectroscopy (3) Staff
Prerequisite: Consent of the instructor. The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

254 • Advanced Topics in Nuclear Physics (3) Staff
Prerequisite: Consent of the instructor. The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

255 • Advanced Topics in Theoretical Physics (3) Staff
Prerequisite: Consent of the instructor. The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

260A • Seminar in Advanced Topics (1) Staff

260B • Seminar in Nuclear Physics (1) Staff

260C • Seminar in Molecular Physics (1) Staff

260D • Seminar in Theoretical Physics (1) Staff

260E • Seminar in Solid State Physics (1) Staff

260F • Seminar in High Energy Physics (1) Staff

594 • Special Topics (1-4) Staff
Prerequisite: Consent of the instructor. Special seminar on research subjects of current interest. Each staff member has his own seminar identified by the same number code as the 599 series.

595 • Group Studies (1-6) Staff
Prerequisite: Consent of the instructor. Each staff member has his own group studies course identified by the same number code as the 599 series.

596 • Directed Reading and Research (2-6) Staff
Prerequisite: Consent of the instructor. Individual tutorial. Reading and research in special topics including work done as the basis for the dissertation. Each staff member has his own directed reading and research courses identified by the same number code as the 599 series.

597 • Preparation for the Qualifying Examination (1-4) Staff
Prerequisite: Consent of the graduate advisor. Directed group or individual preparation for the doctoral qualifying examination. No unit credit is allowed toward advanced degrees.

599 • Dissertation Preparation (1-6) Staff
Prerequisite: Consent of the instructor. This course is reserved for writing the dissertation. May be repeated for credit up to 12 units. Each staff member has research course identified by the following number code.

28	BARRETT P H
29	BENARD D J
02	BROIDA H P
03	CALDWELL D O
04	CANNELL D S
05	EISBERG R M
30	EISNER A M
06	ELINGS V B
07	FULCO J R
08	HALL L H
09	HANSMA P K
10	HARTLE J B
11	HONE D W
12	JACCARINO V
25	KING A R
27	LEE P H
14	LEWIS H W
15	MORRISON R J
16	PEALE S J
17	SAWYER R F
18	SCALAPINO D J
19	SCHRANK G E
21	SUGAR R L
22	WALKER W C
32	WILKINS D C
33	WOODS R D
34	YELLIN S J
35	BROWN D A

Political Science

Professors

[4]*Stanley V. Anderson*, Ph.D., Berkeley; public law; international law.
Gordon E. Baker, Ph.D., Princeton; American political thought; state politics.
Roger H. Davidson, Ph.D., Columbia; legislative behavior; political behavior; public policy.
William Ebenstein, Ph.D., Ph.D., LL.D., Wisconsin; political theory; modern ideologies.
Russell H. Fitzgibbon, Ph.D., Wisconsin; LL.D., *(Emeritus)*.
Stephen S. Goodspeed, Ph.D., Berkeley; international organization.
Wolfram Hanrieder, Ph.D., Berkeley; international politics.
Raghavan Iyer, D. Phil., Oxon.; political philosophy; contemporary theory.
Dean Mann, Ph.D., Berkeley; American politics; public policy; public administration (Chairman).
Peter H. Merkl, Ph.D., Berkeley; comparative politics; European politics.
C. Herman Pritchett, Ph.D., Chicago; constitutional law; judicial process.
Henry A. Turner, Ph.D., Chicago; political parties; interest groups
Robert G. Wesson, Ph.D., Columbia; international relations; Soviet politics.

Associate Professors

Haruhiro Fukui, Ph.D., Australian National University; Japanese politics; comparative politics
Michael Gordon, Ph.D., Harvard; international politics.
Alan P. Liu, Ph.D., MIT; Chinese politics; comparative politics.
John E. Moore, Ph.D., Princeton; public and regulatory administration.
A. E. Keir Nash, Ph.D., Harvard; comparative politics; public policy; population.
Robert C. Noel, Ph.D., Northwestern; decision processes; simulation; methodologies.
Thomas S. Schrock, Ph.D., Chicago; political philosophy; public law.

Assistant Professors

Biliana C. S. Ambrecht, Ph.D., UCLA; urban politics; public administration; public policy; political behavior.

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[4] Absent on Leave 1975-76

Charles Ornelas, Ph.D., UC Riverside; Latin American politics; Chicano politics.

Alan J. Wyner, Ph.D., Ohio State University; political behavior; public administration.

Lecturers

Joseph Lodge, J.D., Michigan; administration of justice.

Concerns of the department

"Political Science deals with the nature, the accumulation, the distribution, the exercise, and the control of power on all levels of social interaction, with special emphasis upon the power of the state." (Hans J. Morgenthau). In exploring the processes by which individuals and groups acquire and use power, political science draws on historical, economic, and behavioral data to illuminate government's role in the contemporary world. In addition to analyzing political behavior and public policy formation, the Department gives full attention to political philosophies and ideologies — to concepts that serve as ends or goals for individuals and groups.

The Department of Political Science offers a balanced program, emphasizing the integration of theory and practice rather than any single approach or methodology. In addition to its standard program, the Department also offers a Public Service Emphasis for undergraduate majors, giving students an opportunity to participate in governmental or political offices and to apply their analytical skills in a manner that relates theory to practice. An undergraduate Honors-Thesis program allows selected students to pursue small-group study and research, culminating in a major writing project. The M.A. and Ph.D. programs encompass work in all fields of political science, with students taking their work in small seminars and graduate courses.

Among the physical facilities for study and research is the distinctive POLIS Laboratory, which includes a computer-based simulation network for enacting real or hypothetical problems in local, national and international politics. In addition to the POLIS Lab, the Department's instructional support resources include a workshop in comparative politics, a film library and the government documents section of the UCSB Library.

Bachelor of Arts in Political Science

Preparation for the major

Required Lower Division courses: Political Science/12 *or* 5 and 10 *or* 100; Political Science/45 or 25†; One additional Lower Division Political Science course.

Required work in cognate disciplines: five courses to be distributed among the following three areas, with at least one course taken in each. Recommended courses are indicated. Substitutions may be made with the consent of the Department.

Group I: History/4A—B—C, 12, 17A—B, 19, 46, 72, 81, 86, 89, 105, 108A—B, 126A—B, 127A—B, 128A—B, 167A—B, 168, 170J—K, 171A—B, 173A—B, 174A—B, 175A—B—C; Economics/103, 112, 113A—B.

Group II: Economics/1, 2, 109 (109 not open to students who have taken Economics/1 and/or 2), 110, 114, 120, 175.

Group III: Anthropology/2 or 101, 102, 103, 104, 106A—B, 108, 110, 113, 114, 119, 134, 173; Sociology/1 or 101, 2, 45, 48, 120, 126, 129, 130, 131, 134, 148, 167, 172, 173, 174; Geography/2, 105, 106, 107; Philosophy/108.

Upper Division major

Required Upper Division courses: 36 units which must include at least one course from each of the following three groups (12 units). (Upper Division courses are not open to freshmen.)

Group I: Political Science/105, 121, 147.

Group II: Political Science/101, 110, 113, 187, 188, 189.

Group III: Political Science/115, 152, 153, 154, 155, 156, 157, 180.

The remaining 24 units may include courses from the above options (other than those used for the 12 unit requirement) as well as from other Upper Division Political Science courses not listed. No more than a *combined* total of eight units of courses numbered 190 and above (nor of four units each in Political Science/190, 192, 193, 194, or 199) may apply toward major requirements.

Honors-Thesis Program: In the Winter Quarter of their junior year, students with outstanding academic records may apply for the Department's Honors-Thesis Program. Those accepted commence their work in the following quarter with a specially designed seminar; in their senior year they take additional seminar work and write a thesis exploring a topic in considerable depth. For information, students should inquire at the Department office.

Bachelor of Arts in Political Science with a Public Service emphasis

The Department offers a public service emphasis for undergraduate majors. The curriculum is somewhat different from the regular major because the course work focuses on the fields of Politics and Public Administration plus required work in Sociology, Economics and Environmental Studies. Students in this emphasis usually serve a one quarter, full-time internship in a governmental or political office during their senior year. See the Undergraduate Adviser for further details.

Preparation for the major

Required Lower Division courses: Political Science/12 or 5 and 10 or 100. Political Science/45 or 25†. One additional Lower Division course in Political Science.

Required work in cognate disciplines: five courses to be distributed among the following two areas with two courses to be chosen from the first area including at least one History course, and three courses to be chosen from the second area as noted: Substitutions may be made with the consent of the Department.

Area I. History/4A—B—C, 12, 17A—B, 19, 46, 72, 81, 86, 89, 105, 108A—B, 126A—B, 127A—B, 128A—B, 167A—B, 171A—B, 173A—B, 174A—B, 175A—B—C; Economics/103, 112, 113A—B, (Economics History courses)

Anthropology/2 (or 101), 102, 103, 104, 106A—B, 108, 110, 113, 114, 119, 134, 173

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†Students planning to major in Political Science are encouraged to enroll in Political Science/12. Political Science/100 is designed for Upper Division transfer students who lack Lower Division political science units. Those students selecting Political Science/25 are also expected to complete Political Science/105 as one of the courses in the Upper Division major. With the Department's approval, the Political Science/45 requirement may be satisfied through previous course work in comparative government.

Geography/2, 105, 106, 107
Philosophy/108

Area II. Three courses from A, B, and C, at least two of which must be in the same group:

A. Economics/5, 110, 120, 130, 175
B. Environmental Studies/125, 135
C. Sociology/126, 127, 131

Upper Division major

Required Upper Division courses in Political Science: 40 units to be distributed as follows:

A. 172 or 173 or both 190A&M
B. 180 or 181 or 185
C. One additional course from A or B.
D. Two courses from 152, 153, 154, 155, 156, 157, 174, 175, 176, 177
E. 115 or 165
F. One course from 105*, 110, 113, 121, 147, 187, 188, 189
G. 192 and 196PS to be taken concurrently during one quarter of internship in a governmental or political office.

Combination Social Sciences major

Students interested in obtaining a major in the combined Social Sciences should see listing under "Social Sciences," in this catalog.

Master of Arts

The M.A. degree in political science is offered both under *Plan I, the thesis plan*, and *Plan II, the comprehensive examination plan.* The department normally operates under *Plan II,* but in exceptional cases the student, with the consent of the Department Chairman, may follow *Plan I.* Applicants are encouraged to request from the Department a copy of the current "Graduate Program Statement" which offers a more detailed explanation of the program. In addition applicants are generally expected to submit results of the Graduate Record Examination.

Plan I. Thesis Plan — Candidates must complete at least 36 units of course work, including credit for the thesis.

The required course work will normally be completed in graduate courses in political science. A maximum of six units may be in 598 courses representing credit for research underlying the thesis. For certain programs, and with the approval of the student's adviser, a maximum of eight of the remaining units making up the required total of 36 may be included from graduate courses in related disciplines.

Candidates will be required to complete, in graduate standing, course work in three of the political science fields.

Before certifying a student for formal advancement to candidacy, the department reserves the right to satisfy itself as to the candidate's proficiency by means of special written or oral examinations.

Plan II. Comprehensive Examination Plan — Candidates must complete at least 36 units of course work.

The required course work will normally be completed in graduate courses in political science. For certain programs, and with the approval of the student's adviser, a maximum of eight units may be included from graduate courses in a related discipline..

Candidates will be required to complete, in graduate standing, course work in three of the political science fields.

Candidates must pass oral examinations in two fields, in addition to having completed two graduate courses or seminars outside of the examination fields.

Doctor of Philosophy

The award of the degree of Doctor of Philosophy is not based merely on the fulfillment of technical requirements, but signifies that the Department is satisfied that the candidate is professionally qualified as a political scientist, competent to carry on scholarly research and academic instruction in fields of specialization. The following specific requirements should be taken in this context.

Requirements

Admission Completion of the Master of Arts degree or its equivalent is the normal prerequisite for admission to the doctoral program. Admission is by approval of the Graduate Dean and by the departmental chairman. Only strong performance in previous undergraduate or graduate studies will be considered as justification for undertaking work toward the doctorate. Applicants are encouraged to request from the Department a copy of the current "Graduate Program Statement" which offers a more detailed explanation of the program. In addition, applicants are generally expected to submit results of the Graduate Record Examination.

Residence The University of California requires a minimum of two years' full-time residence in graduate study for the doctorate, at least one year of which must be spent in continuous residence at the University. Normally, students will require two years of resident graduate study at this or other universities before taking the qualifying examinations.

Languages The candidate must demonstrate a thorough knowledge of one foreign language or competence in the use of specialized research methods. Whatever option is chosen, it must be completed prior to taking the written qualifying examinations. Further details may be found in the "Graduate Program Statement."

Fields of Study and Qualifying Examinations The work offered in political science falls into six fields: Political Theory, Public Law, Politics, Public Administration, International Relations, and Comparative Politics (including area studies). Political Science/203 or its equivalent is normally required of all Ph.D. candidates. Each Ph.D. candidate will be expected to demonstrate competence in three fields of Political Science by means of written qualifying examinations. In addition, a minimum of three graduate courses or seminars or their equivalent in a fourth field of Political Science must be taken. Upon the recommendation of the advisory committee and approval of the Graduate Adviser, a student may substitute a field from a related discipline when such a substitution will enhance the overall competence of the student in the major field within Political Science. Other than in exceptional circumstances, this outside field may be substituted only for the field of Political Science normally satisfied by course work, and must be completed prior to taking the written qualifying examinations in the other three fields.

After successful completion of the written qualifying examinations the student will take an oral examination which will explore the individual's overall competence as a political scientist. Particular emphasis will be place on the major field and on important substantive, epistemological, or methodological topics and problems in the discipline.

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*Students who took Political Science/25 in preparation for the major must take 105 to satisfy this requirement.

The Dissertation With the advice and approval of the doctoral committee, each student will select a dissertation topic in the major field of specialization. The dissertation must be based on original research and must make a significant contribution to knowledge in the field.

Career opportunities

In addition to providing a sound general education in the liberal arts, a major in Political Science is a particularly suitable preparation for careers in government service, law and journalism.

Teaching credentials

Students who complete a major in Political Science may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Consult with the Graduate Adviser in the Department of Political Science.

Students interested in a community college instructors credential and the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Department of Political Science, University of California, Santa Barbara, California 93106 Phone: (805) 961-3431.

Political Science

Lower Division courses

5 • American Government: The Constitutional System (4) Staff
The functions, development and interpretation of the American Constitution; federalism; the role of the Supreme Court; civil liberties and civil rights. For Lower Division students only.

10 • American Government: The Political Process (4) Staff
Parties, interest groups, campaigns and elections; Congress and the Presidency. For Lower Division students only.

12 • American Government and Politics (5) Staff
Political ideas, institutions and processes of American government. The role of Congress and the President in policy formation and of the Supreme Court in interpreting the Constitution. Recommended for majors. Not open to students who have received credit for Political Science/5, 10, or 100.

15 • American Government: Contemporary Issues of Public Policy (4) Staff
Prerequisite: An introductory course in American government or consent of instructor. An analysis of selected major political conflicts and governmental programs in the United States.

19 • Political Science Conference (3) Staff
Seminar on selected central themes in political science. Themes will vary according to instructor. Open only to Lower Division majors. This course may not be repeated.

25 • Theory and Practice in Politics (4) Iyer
An introduction to the basic problems of political life, as construed in theory and confronted in practice, with emphasis on the objectives of securing public order, social harmony and the common good. Examples will be chosen from ancient city-states, the modern nation-state and contemporary attempts to secure world order. Different versions of the dialectic will be explained.

40A • Modern East Asia: China (4) Liu
A survey of contemporary Chinese politics, including leadership, ideology, organization, social and economic reforms and general foreign relations.

40B • Modern East Asia: Japan (4) Fukui
An introductory general survey of postwar Japanese government and politics with emphasis on domestic political forces and their alignment. Designed to prepare students for the more specialized Political Science/135.

45 • Contemporary Political Ideologies and Systems (4) Ebenstein, Merkl
The main political forces, institutions and ideologies in the world today.

90A • Introductory Lab/Seminar in Policy Processes (2) Noel, POLIS Staff
An introduction, through participation in simulation and/or gaming exercises, to selected current problems in public policy, including urban, environmental and foreign policy problems. (90A may be taken independently of 90B.)

90B • Introductory Lab/Seminar in Policy Processes (2) Noel, POLIS Staff
An introduction, through participation in simulation and/or gaming exercises, to the relationship between policy-making processes and policy content, focusing on decision processes in the executive, legislative, and judicial branches of government at all levels. (90B may be taken independently of 90A.)

Upper Division courses

100 • American National Government (4) Staff
Institutions of our national government and the political ideas on which these institutions have been established; the role of Congress, the President, the courts, administrative agencies and regulatory legislation. Not open to students who have received credit for Political Science 5 or 10, or 12.

101 • Political Inquiry (4) Noel
Theories, techniques and problems of quantitative and other approaches to the data of politics; research design and application; the role of values.

102 • Political Socialization (4) Ambrecht
The process, content, and goals of learning political values and behavior patterns. The application and significance of such characteristics in the functioning of political systems. Socialization as a theoretical and analytical component of political culture.

104 • Comparative Metropolitan Politics (4)
An analysis of institutional developments and political processes in selected industrial nations.

105 • Comparative Political Analysis (4) Liu, Fukui
The concepts, theoretical perspectives, and political phenomena central to comparative analysis and area studies. A core course generally recommended and in some instances required for advanced work in comparative government.

106 • Gaming in Social Analysis (4) Noel
Prerequisite: Consent of the instructor. Applications of simulation and gaming methodologies in the analysis of social and political processes.

107 • Computer Applications in Political Science (4) Noel
Prerequisite: Competence in at least one higher-order programming language, e.g., FORTRAN IV, BASIC, PL-1, etc. A survey of computer applications in the acquisition, management and analysis of political data and simulation and modeling of political phenomena.

108 • Politics and Literature (4) Iyer
This course will explore the political content of contemporary literature. Emphasis will be placed on concepts such as alienation, organization, power, freedom, etc., and the ways in which they have been dealt with by modern authors.

109 • Revolution and Mass Movements (4) Liu
Revolution as a special type of mass movement, focusing on the French, Bolshevik and Chinese Communist revolutions and comparing them with movements falling short of a total restructuring of the society, economy and polity.

110 • Political Concepts (4) Iyer
Introduction to some of the main concepts of political theory such as the individual and the state, freedom and equality, political obligation and their relevance to modern society and government.

111 • Anarchist Thought (4) Iyer
An examination of the diverse and enduring strains of anarchist thought concerning the reconstruction of society, politics and the individual personality. Theories and programs from Godwin to Gandhi, the late 18th century to the present, will be considered with an emphasis on the relation between theory and practice. (This course is designed for majors; non-majors must secure permission of instructor.)

113 • American Political Thought (4) Baker
The origin and development of significant political ideas in the United States, as expressed in the contributions of selected thinkers.

115 • Law in the Modern State (4) Pritchett, Schrock
Legal institutions in democratic societies, with particular reference to the United States. The role of lawyers, judges, and courts. The unique functions of the Supreme Court in the American political system. Judicial reasoning as reflected in selected decisions.

116 • Comparative Legal Systems (4) Anderson
The origins, basic theoretical assumptions and actual functions of two legal systems — continental (civil) law and common law.

117 • Jurisprudence (4) Anderson, Schrock
Prerequisite: Political Science/115 or consent of instructor.
An inquiry into the nature of law and justice.

May be applied to fields of Public Law or Political Theory; not to both.

118 • Electoral Politics (4) Davidson
An examination of theoretical and practical issues involved in participation in the U.S. electoral system. A series of interdisciplinary lectures and core readings, supplemented by consideration in discussion sections of various facets of the forthcoming elections. This is the same course as Sociology/118.

121 • International Politics (4) Gordon, Hanrieder
An examination of theories concerning the actions, interactions and relationships among nation-states.

122 • Selected Problems in International Politics (4) Gordon
Prerequisite: Political Science/121, or consent of instructor.
Theoretical analysis of some significant problems in the relations among nation-states during the twentieth century. Likely topics: Origins of World War I; Munich Crisis; Origins of the Cold War; Evolution of East-West Relations; Vietnam War.

124 • International Organization (4) Goodspeed
The nature and function of international organization, stressing an evaluation of the experience of the League of Nations and the United Nations; regional organizations and specialized agencies.

125A—B • International Law (4,4) Anderson
Prerequisite: Political Science/115 or consent of instructor.
Nature and sources of international law; international legal personality; nationality, territory, jurisdiction; diplomatic and consular agents; treaties; war; neutrality.

126 • International Relations of East Asia (4) Fukui
The foreign relations of China, Japan, and Korea as interpreted in terms of contemporary international relations theory and concepts.

127 • American Foreign Policy (4) Hanrieder, Noel, Wesson
The United States in world politics. Policy making institutions, particularly the Presidency, Congress, State Department and the military establishment. Interaction between domestic and external politics

128 • Soviet Foreign Policy (4) Wesson
The foreign policies of the Soviet Union considered in relation to such concepts as continuity and change, Messianism and real-politik, tactics and strategy, coexistence expansion.

129 • Foreign Policies of Western European Powers (4) Gordon
Contemporary policies of Britian, France, Germany, Italy and the Common Market.

130 • Comparative Communist Systems (4) Staff
A comparative examination and analysis of the Communist systems of Eastern Europe, Soviet Russia and China, with particular reference to sources of growing diversity in institutions, concepts of man and society, economic policy and the role of the party.

131 • China in World Affairs (4) Liu
The ideological and cultural attitudes of mainland China, with emphasis on general policies both within the Communist world and other areas (South Asia, Africa and America).

132 • Latin America in World Affairs (4) Ornelas
Relations of Latin America with the United States and other world powers; Pan-Americanism and its relation to world organization.

133 • Comparative Urban Politics (4) Ornelas
Selected problems of the impact of urban growth and development on the urban political process, with particular attention to the developing nations. In a comparative framework an examination of differences in the politics of ethnic groups in urban America

134 • Nationalism and Communism in East Asia (4) Fukui
Actions and interactions of the forces of nationalism and communism in East Asian politics, with emphasis on the role of organized groups representing these forces.

135 • Government and Politics of Japan (4) Fukui
The organization and operation of Japanese politics, with particular attention to domestic political forces and problems.

136 • Government and Politics of China (4) Liu
The ideology, structure, and functions of the Chinese political system, with emphasis on the nation-building process under the Communist regime.

140 • Politics of France and Italy (4) Merkl
The political culture, history, political parties and governmental organization of France and Italy.

141 • Politics of Germany (4) Merkl
The political culture, history, political and social forces, and governmental organization of Western Germany and Eastern Germany.

142 • British Politics (4) Gordon
The political culture, history, institutions and behavior of Great Britain.

143 • Government and Politics in the Soviet Union (4) Wesson
Ideological foundations. Structure and methods of the Communist Party. The apparatus of government and its development.

144 • Governments of Central and Eastern Europe (4) Staff
The political cultures, ruling parties, ideological foundations and practices and socio-economic problems. Foreign policies, including analyses of cohesive and divisive forces within the Communist bloc.

145 • The Politics of Scandinavia (4) Anderson
The political culture, institutions, processes, and relations of the Scandinavian states — Sweden, Norway and Denmark. Special Emphasis on general problems of post-industrial society.

146 • The Political Systems of Tropical Africa (4) Staff
A comparative analysis of the political systems of a selected number of new states in tropical Africa, with particular emphasis placed upon the social, economic and cultural setting of politics in these states.

147 • The Politics of Developing Areas (4) Liu, Fukui
A comparative analysis of the political systems of a selected number of African, Asian and Middle Eastern countries, with particular attention to the general problems of political development and modernization common to all of them.

148A—B • Governments of Latin America (4,4) Staff
A • A comparative study of governmental and political development, organization and practices in the states of Middle America.
B • A comparative study of governmental and political development, organization and practices in the states of South America.

149 • Comparative Party Systems (4) Nash
Analysis of the roles performed by political parties in a selected number of industrialized and developing nations. Relationships between party systems and such factors as economic development and social stability.

150 • Politics of the Middle East (4) Staff
The development of governmental institutions and political forces in the post-colonial era. Emphasis will be placed on relationships between internal cultural dynamics and international politics and examples will include the Arab-Israeli confict.

152 • American Political Parties (4) Davidson, Turner
The nature, characterstics, and history of American political parties; party organization; political campaigns and finance; nominations, elections and electoral problems.

152L • American Political Parties Lab (1) Davidson, Turner
Laboratory exercises in the study of political parties with emphasis on party organization, nominations, elections and electoral problems. (When offered it must be taken concurrently with 152.)

153 • Political Interest Groups (4) Turner
The nature and function of organized interest groups and their impact upon public opinion and government

154 • Public Opinion (4) Staff
A study of the nature and the means of formation of public opinion. Public opinion as a factor in popular government and as a control device in the modern state.

155 • American Legislatures (4) Davidson, Mann
The organization, operation, and politics of Congress and the state legislatures; problems of representation, leadership and relations with interest groups.

155L • American Legislatures Lab (1) Davidson, Mann
Political Science Laboratory in the organization, operation and politics of Congress and the state legislatures; problems of representation, leadership and relations with interest groups. (When offered it must be taken concurrently with 155.)

156 • Analysis of Political Behavior (4) Wyner
Theories, methodologies and findings of the behavioral approach to the study of the politcal system and men in that system. Chief reference is to the American system.

157 • The American Presidency (4) Davidson, Mann
Analysis of the institution of the Presidency, its functions, formal and informal relationships, and its limitations within the American political system. Emphasis on the dynamics of the Presidency, including presidential personality, conception of role, impact of public opinion and responses to changes in the environment.

158 • Power in Washington (4) Staff
An examination and assessment of the policy and political

linkages between White House and Capitol Hill — decision-making, legislative enactment, administrative implementation; the presidential establishment, bureaucratic politics and the politics of influence and access in Washington.

165 • Administration of Justice (4) Anderson, Schrock, Lodge
An examination of local courts in particular, with emphasis on procedural problems and suggested reforms. The American adversary system is stressed within the context of comparative judicial administration.

166 • American Constitutional Law: Distribution of Power (4) Anderson
Prerequisite: Political Science/115 or consent of instructor. The role of the Supreme Court as arbiter of federalism and separation of powers; interplay of political, social and economic forces.

167 • Constitutional Law: Civil Liberties (4) Pritchett
Prerequisite: Political Science/115 or consent of instructor. The role of the Supreme Court as interpreter of constitutional freedom of expression and conscience; procedural guarantees and equal protection of the laws.

172 • State and Local Government (4) Baker, Wyner
Basic problems and recent developments, with emphasis on state political forces, institutions and processes. Intergovernmental relations.

172L • State and Local Government Lab (1) Baker, Wyner
Political Science Laboratory in basic problems and recent developments, with emphasis on state political forces, institutions and processes. Intergovernmental relations. (When offered it must be taken concurrently with 172).

173 • Urban Government and Politics (4) Ambrecht
Problems of politics and administration in urban and metropolitan areas.

Students planning to complete both Political Science/172 and 173 are encouraged to begin with Political Science/172.

173L • Metropolitan Government and Politics Lab (1) Ambrecht
Laboratory exercises in metropolitan government and politics with emphasis on local interest groups, local decision-making, and intergovernmental relations. (When offered it must be taken concurrently with 173)

174 • Chicano Politics (4) Ornelas
Political life in the barrio, political behavior of the Chicano community and representation of Chicanos by elected officials and interest groups. **(Same as Chicano Studies/174)**

175 • Politics of the Environment (4) Mann
Analysis of environmental policy issues and their treatment in the political process. Discussion of the interplay of substantive issues, ideology, institutions and private groups in the development, management, protection and preservation of natural resources and the natural environment.

176 • Black Politics in America (4) Staff
A general survey of political phenomena in the Black community. American political institutions, law, legislation and administration will be examined in theory and practice to determine their function in relation to Black politics. **(Same as Black Studies/176)**

177A—B • Politics and Population (4,4) Nash
This 2 quarter-course sequence will explore changes in population growth, population migration, and demographic composition as political problems in both industrialized and non-industrialized countries. Political effects of population-induced social, economic, and environmental strains. Hidden vs. deliberate population policies, population control, "cultural-economic" imperialisms and political equity. Freedom, technology, population change and political values.

179 • Sex Roles in Politics (4) Staff
An overview and analysis of the major ideas and issues posed by the emerging cleavage along sex lines, especially the political and economic aspects of women's position and influence in society. Major feminist writings and proposals for social change are included.

180 • Public Administration and Public Policy (4) Moore
The nature of American bureaucracy, behavior patterns of public officials, and the role of administration in the political process.

180L • Public Administration and Public Policy Lab (1) Moore
Political Science Laboratory in the nature of American bureaucracy, behavior patterns of public officials, and the role of administration in the political process. (When offered it must be taken concurrently with 180)

181 • Public Administration: Organization and Process (4) Moore, Wyner
Concepts and issues of public administration, including theories of organization, decision making, administrative behavior and budgetary processes. Students planning to complete both Political Science/180 and 181 are encouraged to begin with Political Science/181.

184 • Comparative Administration (4) Staff
A comparative analysis of the public bureaucracies of a selected number of developed and developing countries, with particular attention being given to the cultural determinants of administrative norms and behavior.

185 • Government and the Economy (4) Moore
Government's evolving role in economic life; the cultural, political, and philosophical setting of government-business relations; the maintenance and moderation of competition; the goals, methods, and politics of regulatory administration.

187 • Political Theory: Ancient and Medieval (4) Schrock
The development of political theory from Plato and Aristotle to the sixteenth century.

188 • Modern Political Theory (4) Schrock
Development of political ideas from the sixteenth century to the nineteenth century.

189 • Recent and Contemporary Political Theory (4) Ebenstein
Development of political ideas in the nineteenth and twentieth centuries.

No more than a combined total of eight*units of courses numbered 190 and above (nor of four units each in Political Science/190, 192*, 193, 194 or 199) may apply toward the major requirements.

190A • Laboratory/Seminar in Urban Policy Problems (2) Noel, POLIS Staff
An examination, through computer-based gaming and simulation, of selected problems in urban policy, with special emphasis on the relationships among social, political and economic policy alternatives and the dynamics of growth and decay. (190A may be taken independently of other 190 labs.)

190B • Laboratory/Seminar in Foreign Policy Problems (3) Noel, POLIS Staff
An examination, through participation in diplimatic gaming exercises, of selected problems in American foreign policy, such as: the conflicts in the Middle East and Southeast Asia, great-power relations, arms control and disarmament, developing areas, etc. (190B may be taken independently of other 190 labs.)

190C • Laboratory/Seminar in Environmental Policy Problems (3) Noel, POLIS Staff
An examination, through computer-based gaming and simulation, of selected problems in environmental policy and politics. Offerings of 190C will alternate between an urban air-pollution focus (the "METRO-APEX" simulation) and a water-pollution focus (the "River Basin Model"). Accordingly, 190C may be repeated for credit. (190C may be taken independently of other 190 labs.)

190I • International Politics in Motion (2) Staff
This course will emphasize the film as the central focal point for instruction in international relations and may be taken concurrently with Political Science 121. Selected themes to be introduced include Cold War origin, revolution, intervention, alliance systems and foreign policy decision making. Students will be expected to evaluate each film and the results will be incorporated into the film critiques of students enrolled in Political Science 194.

190L • Latin American Workshops (2) Staff
Prerequisite: Must be enrolled in Political Science/148B. Laboratory, using multi-media approach, oriented to analyze political issues of the ten South American countries.

190M • Laboratory/Seminar in Executive Decision Processes (2) Noel, POLIS Staff
An examination, through participation in simulation and gaming exercises, of selected aspects of executive processes, including presidential advisory and information functions, coordination and central clearance and Presidential-Departmental relations. (190M may be taken independently of other 190 labs.)

190N • Laboratory/Seminar in Electoral Decision Processes (2) Noel, POLIS Staff
An examination, through computer-based simulation and gaming, of alternative explanatory models for voter choice, including attitudinal, sociological and utility models. (190N may be taken independently of other 190 labs.)

190S • Laboratory/Seminar in Social and Political Theory (2) Noel, POLIS Staff
An examination, through participation in a simulated society exercise ("SIMSOC") of selected problems in general social and political theory, including the problem of social order, legitimacy and collective versus individual decision. (190S may be taken independently of other 190 labs.)

192 • Field Research in Political Science (4-12) Davidson, Wyner
Prerequisites: UD status, 3.00 overall GPA, approval by Department. Directed research on the political process through participant observation and relevant reading. Individually assigned, instructed and supervised field work. Students will examine first hand behavior in leading political roles in American politics.

193A—B • Internship in Government (4,4) Wyner
Prerequisite: Permission of the instructor. Special seminar for selected students in contemporary urban problems. Offered in conjunction with practical experience in local governmental office. Students are expected to participate in the course for two quarters, although only four units will apply to the major.

194 • Group Studies (1-4) Staff

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*See Public Service Emphasis for an exception.

Subject to Departmental approval, students may repeat this course. Themes will vary according to instructor. Only four units may apply to the major.

195 • Honor Seminar (4) Staff
Prerequisite: Open only to Upper Division students who have been accepted into the Department's Honors Program. An intensive analysis of the approaches, problems, and methodologies of a particular sub-field of political Science.

196 • Senior Seminar in Political Science (4) Staff

197A—B—C • Senior Thesis in Political Science (4,4,4) Staff
Prerequisites: Senior standing: 3.0 grade-point average; and approval of department. Selected seniors may pursue individual, significant research projects with close tutorial I supervision of faculty advisers. May be repeated for up to 12 units, but only four units may apply to major requirements.

***199 • Independent Studies in Political Science** (1-5) Staff
Admission by special permission only. For majors. No more than 4 units of 199 may count toward completion of the major requirements.

Graduate Courses

203 • The Nature of Political Inquiry (4) Staff

204 • The Design and Analysis of Political Research (4) Noel

205 • Data Collecting Techniques in Political Research (4) Staff

215 • The American Governmental Process (4) Davidson, Mann

220 • Constitutional Interpretation (4) Schrock

225 • International Relations (4) Gordon, Hanrieder

230 • Comparative Political Systems (4) Merkl

241 • Seminar in Conflict Studies (4) Noel

252 • Seminar in Public Opinion and Political Participation (4) Staff

253 • Seminar in Political Interest Groups (4) Turner

254 • Seminar in the Legislative Process (4) Davidson, Mann

255 • Seminar in State Government and Politics (4) Wyner, Baker

256 • Seminar in the American Presidency (4) Davidson, Mann

257 • Seminar in Urban Government and Politics (4) Ambrecht

258 • Seminar in Politics and Population Policy (4) Nash

259 • Seminar in Political Parties (4) Turner

260 • Seminar in the Judicial Process (4) Pritchett

261 • Seminar in Public Law (4) Schrock, Anderson

262 • Seminar in American Constitutional Law (4) Pritchett

265A • Seminar in Political Theory: Ancient and Medieval (4) Ebenstein

265B • Seminar in Political Theory: Modern (4) Ebenstein

265C • Seminar in Political Theory: Contemporary (4) Ebenstein

278 • Seminar in American Political Thought (4) Baker

269 • Seminar in Political Concepts (4) Iyer

271 • Seminar in International Politics (4) Wesson

272A—B • Seminar in International Law and Organization (4,4) Anderson, Goodspeed

274 • Seminar in Theories of International Politics (4) Hanrieder

277 • Seminar in American Foreign Policy (4) Hanrieder

278 • Seminar in Comparative Foreign Policy (4) Liu

280A—B • Seminar in Soviet Studies (4,4) Wesson
Prerequisite for 280A: Political Science/230 or equivalent. 280B: Political Science/280A or equivalent.

281 • Seminar in Comparative Communist Systems (4) Staff

282A—B • Seminar in Latin American Governments (4,4) Staff

283A—B • Seminar in Western European Politics (4,4) Merkl, Gordon

284 • Seminar in Politics and Socio-Economic Change (4) Nash

285 • Seminar in Chinese Politics (4) Liu

286 • Seminar in Japanese Politics (4) Fukui

287 • Seminar in South Asian Studies (4) Staff

288 • Seminar in African Politics (4) Staff

289 • Seminar in Political Development (4) Staff

290 • Seminar in The Study of Public Administration (4) Moore

291 • Seminar in Public Administration and Public Policy (4) Moore

293 • Seminar in Comparative Public Administration (4) Staff

296 • Seminar in Models in Politics and the Social Sciences (4) Iyer

594AA—594ZZ • Special Topics (1-4) Staff

595AA—595ZZ • Group Studies (4) Staff

596AA—596ZZ • Directed Reading and Research (2-6) Staff

597AA—597ZZ • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-12) Staff

598AA—598ZZ • Master's Thesis Research and Preparation (1-4) Staff

599AA—599ZZ • Ph.D. Dissertation Preparation (1-12) Staff

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*See L-2 for 198/199 independent studies unit limitations.

Psychology

Professors

Gerald S. Blum, Ph.D., Stanford; cognitive and affective processes, experimental psychodynamics, hypnosis.

John W. Cotton, Ph.D., Indiana; educational psychology, mathematical learning theory, statistics.

Walter C. Gogel, Ph.D., Chicago; visual perception, psychophysics, perceptual learning.

Robert M. Gottsdanker, Ph.D., Berkeley; perceptual-motor skill, set and attention, information processing.

[1]*Gerald H. Jacobs*, Ph.D., Indiana; vision, physiological.

Howard H. Kendler, Ph.D., Iowa State; conceptual behavior, cognitive development, theoretical psychology.

Tracy S. Kendler, Ph.D., Iowa State; developmental, learning, problem solving.

Charles G. McClintock, Ph.D., Michigan; social motivation, development, behavior.

[1]*David M. Messick*, Ph.D., North Carolina; social, quantitative, decision making.

Robert W. Reynolds, Ph.D., Buffalo; physiology and biochemistry of motivation and emotion (Chairman).

William D. Altus, Ph.D., NYU; individual differences, personality. *(Emeritus)*

Alma B. MacGregor, Ph.D., Columbia; *(Emeritus)*.

Associate Professors

Marilyn B. Brewer, Ph.D., Northwestern; social psychology.

Harry J. Carlisle, Ph.D., Washington; physiological psychology.

John M. Foley, Ph.D., Columbia; visual perception, cognitive processes.

Jerry W. Higgins, Ph.D., Michigan; personality and psychopathology.

Elijah P. Lovejoy, Ph.D., Pennsylvania; learning, mathematical models, behavior modification.

Assistant Professors

Daphne Blunt Bugental, Ph.D., UCLA; social and personality development, interpersonal communication.

Ben M. Clopton, Ph.D., Washington; audition, physiological.

Roberta L. Klatzky, Ph.D., Stanford; human memory, cognitive processes, psycholinguistics.

Robert E. Lasky, Ph.D., Minnesota; developmental, cognitive and perceptual processes in infancy, speech perception.

Jack M. Loomis, Ph.D., Michigan; visual perception, cutaneous perception.

A. Robert Sherman, Ph.D., Yale; behavior modification, experimental psychopathology, personality.

Concerns of the Department

The major in psychology is designed to provide the student with an appreciation of the scientific study of behavior.

The range of course offerings is broad, from psychophysiological to social psychological functioning. The entering major is encouraged to sample widely from this spectrum before specializing in any given area. The major areas within the department are: psychophysiology, perception, learning, personality, developmental, and social psychology. However, a large number of offerings either straddle or fall outside these areas, such as courses in psychopharmacology, motivation and emotion, thinking and problem solving, computer applications, language, psychopathology, pychometrics, psychotherapy, human sexuality, developmental socialization, cognitive processes, intergroup conflict, etc. In addition, the department offers some of its senior majors a two-to-three quarter field experience in psychological settings in the community. Advanced students also have the opportunity to attend seminars treating specialized topics, and to conduct independently designed research or reading projects under the supervision of a faculty member.

The Department of Psychology offers a multi-track program leading to a Bachelor of Arts or a Bachelor of Science degree. Students who wish a B.A. in general Psychology may follow a program which provides them with a highly flexible track to the degree. Students may also select a major leading to the B.A. along one of two more structured tracks: Experimental Psychology or Developmental Psychology. Alternatively, students completing the major in Physiological Psychology will be awarded the Bachelor of Science degree.

The Bachelor of Arts degree program in general psychology is recommended for students whose interests are in obtaining a liberal arts education and in understanding contemporary issues in psychology. The requirements of this major can be fulfilled with a variety of courses, so that students may choose to specialize in a given substantive area, or to select a broader, more varied set of courses. Consultation with an advisor is strongly recommended for students in the general Psychology major who plan to enroll in graduate programs. (Also, see Preparation for Graduate Study.)

The Experimental Psychology major stresses the development of laboratory experience along with required lecture courses that focus on research in selected areas rather than on broad surveys. The Experimental major provides a background which is very appropriate for students who wish to attend graduate school.

The major in Developmental Psychology is designed for students who are primarily interested in developmental processes. Those who intend to pursue a paraprofessional position working with children will find this program appropriate. Consultation with an advisor is strongly recommended for students in the Developmental Psychology major who wish to continue to graduate study. (Also, see Preparation for Graduate Study.)

The major in Physiological Psychology, which leads to the Bachelor of Science degree, is designed for those students who are interested in an intensive study of the relationship between brain function and behavior. Such a study requires background preparation in mathematics, chemistry, and physics. Within the major there is a common core involving a study of neuron physiology, neurophysiology and neuroanatomy, biochemical, endocrine, and pharmacological regulations in the central nervous system, and behavioral and psychological data related to these processes. There is flexibility such that the student may elect emphasis in various areas such as sensory psychophysiology, neuropharmacology, the physiology of emotion and motivation, and genetic and developmental psychobiology. This is also an appropriate major for students intending to pursue graduate training in physiological psychology.

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[1] Absent on Leave 1975-76

Bachelor of Arts — Psychology

Preparation for the major

1 • General Psychology is required. 3 • Introduction to Experimental Psychology and 5 • Analysis of Data in Psychology are prerequisites to many Upper Division courses; students are urged to review specific course prerequisites prior to planning their course of study. Certain Lower Division courses in other departments are also required as prerequisites to certain Upper Division courses; students are urged to review specific course prerequisites prior to planning their course of study.

Upper Division major

Thirty-six to 46 units of Upper Division psychology courses are required. If the student successfully completes either Introduction to Experimental Psychology (3) or Analysis of Data in Psychology (5), 41 units of Upper Division psychology courses are required; if he completes both of the foregoing, then 36 units are required; and if he completes neither, then 46 units of Upper Division psychology are required.

Majors must successfully complete at least one course from each of three of the five areas represented in Groups I and/or II. Group I consists of survey lecture courses. Group II consists of advanced lecture and intensive laboratory courses. Where possible, students are encouraged to enroll in both the Group I and Group II course within an area (see following section), preferably taking the Group I course first.

Bachelor of Arts — Experimental Psychology

Preparation for the major

1 • General Psychology, 3 • Introduction to Experimental Psychology, and 5 • Analysis of Data in Psychology are required. Certain Lower Division courses in other departments are required as prerequisites to certain Upper Division courses; students are urged to review specific course prerequisites prior to planning their course of study.

Upper Division major

Thirty-six units of Upper Division psychology courses are required. Majors must successfully complete six courses in Group II, including three laboratory courses. (For areas and specific courses, see following section.)

Bachelor of Arts — Developmental Psychology

Preparation for the major

1 • General Psychology, 3 • Introduction to Experimental Psychology and 5 • Analysis of Data in Psychology are required. Additionally, Biology/20, 22, or 23 is required. The student will be listed as a pre-developmental psychology major until Psychology 1, 3, 5, Biology 20 or 22 or 23, and Psychology 123 have been completed with at least a 2.0 grade point average. Upon completion of these courses, students may petition to enter the Developmental Psychology major.

Upper Division major

Forty units of Upper Division psychology courses are required. The student must enroll in 123 • Developmental Psychology, during the Fall Quarter of the junior year. Students will not become Developmental Psychology majors until they enroll in this course. Preference will be given to pre-developmental majors for the Fall section of Psychology/123 as information about the major and planning of each student's future program will be conducted in this class.

Majors must complete two of the following Group II courses: 110A or 110B • Perception, 111A • Learning or 112 • Social Behavior. (When selecting these two courses, note the prerequisites of the Group IV courses you wish to complete.) Also, students must complete 121 • Psychological Measurements, and one Upper Division course to be chosen from among the prerequisites for the Group IV courses (in addition to the required Group II courses listed above.)

A minimum of three Group IV courses is required. Group IV courses cover developmental aspects of different fields within psychology and are numbered 140-149 inclusive.

The student will also complete one eight-hour practicum/seminar that involves supervised participation in various community organizations that serve children. Each Group IV course is followed in the subsequent quarter by a coordinated practicum. In order to qualify for the practicum, the student must: (a) be a senior, (b) have scheduled a program in advance with the undergraduate advisor, (c) have completed Psychology 121, and (d) have completed the related Group IV course.

Bachelor of Science — Physiological Psychology

Preparation for the major

Students must take the following courses or their equivalents: 1 • General Psychology, 3 • Introduction to Experimental Psychology; Biology/22 or 1A—1AL, 1B—1BL; Chemistry/1A—1AL, 1B—1BL, 1C—1CL, 6AB, 8AB; Physics/6A—6AL, 6B—6BL, 6C—6CL; Mathematics/34A—B—C; and Zoology/40 and 40L.

Upper Division major

Majors must successfully complete 47 units of Upper Division psychology courses as follows: 106 (this course *must* be completed prior to enrolling in 113A), 110B—L, 111A—L, 113A—B—L, 132, and 133A—B. Students who otherwise qualify, and who plan to pursue graduate work are encouraged to take Independent Studies (199) in their senior year.

Group I and Group II offerings by area

Area	**Group I**	**Group II**
Physiological	106 • Brain & Behavior (May not be taken concurrently with or after Psychology/113A, B, or L)	113A • Physiological Psychology 113B • Physiological Psychology 113L • Laboratory in Physiological Psychology
Perception	107 • Perception in Life and Thought (May not be taken concurrently with or	110A • Perception 110B • Perception 110L • Laboratory in Perception

	after Psychology/ 110A, B, or L)	
Learning	108 • Learning & Memory	111A • Learning 111B • Learning 111L • Laboratory in Learning
Personality	103 • Abnormal Personality	114 • Personality Dynamics 114L • Laboratory in Personality
Social	102 • Social Aspects of Behavior	112 • Social Behavior 112L • Laboratory in Social Behavior

Group III courses are designed for the advanced student with specialized interests and are open to majors in all the degree programs. Students are urged to note course prerequisites, which vary from course to course. *Although students may enroll for as many units as they wish,* with respect to fulfilling unit *requirements for the major* the following limits apply:

Course	*Unit limits*
160AA—ZZ • Special Topics in Psychology	8 units from two courses *with different letter designations*
190AA—ZZ • Seminars in Psychology	6 units from three courses *with different letter designations*
194 • Special Group Studies in Psychology	12 units, *providing titles are different.* Students may apply only 12 units combined of 194 and 199 credit towards the Psychology majors.
198 • Undergraduate Seminar	6 units
199 • Independent Studies	12 units. Students may apply only 12 units combined of 199 and 194 credit towards the Psychology majors.

Group IV courses cover developmental aspects of different fields within psychology and are numbered 140-149 inclusive.

Passed/Not Passed option within the major

Psychology majors are permitted to take a maximum of eight (8) units on a passed/not passed basis to fulfill major requirements for any of the Psychology majors from the following courses:

135A—B—C • Field Experience in Psychological Settings
190AA—ZZ • Seminars in Psychology
194 • Group Studies in Psychology
198 • Undergraduate Seminar
199 • Independent Studies

Students who wish to take more than eight units of the above courses or any other Psychology courses passed/not passed may do so. However, such courses will *not* apply to the major requirements.

Undergraduate preparation for graduate study

Preparation for graduate study in psychology (including clinical psychology) at the doctoral (Ph.D.) level ordinarily requires a broad background in psychology and laboratory experience. Any of the four majors can provide sufficient background for graduate studies; however, within the general Psychology major, Psychology/3 and 5 should be included. Furthermore, students are encouraged to complete at least one laboratory course from the Group II series.

Since master's (M.A.) programs are typically more circumscribed than doctoral programs, the prospective master's student is advised to consider the specific requirements of those programs of interest in planning the major.

Selection of courses to fulfill the General Education requirement in the natural and social sciences should be made in consultation with department advisers to ensure adequate preparation in specific areas such as mathematical psychology, physiological psychology, perception, learning, developmental psychology, clinical psychology, personality, psycholinguistics, or social psychology.

General information concerning graduate programs (including admission requirements) in the United States and Canada appear annually in a booklet entitled "Graduate Study in Psychology" published by and available from the American Psychological Association, 1200 Seventeenth Street N.W., Washington, D.C., 20036. More detailed information on programs of study, course offerings, and faculty in residence is available on request from specific departments. Students contemplating graduate study are advised to obtain such information early in their undergraduate careers and no later than the junior year. Students may also consult with their departmental advisor concerning graduate study.

Graduate program

Admission

The deadline for the receipt of all application materials for admission to the Psychology Graduate Program is February 1. The department offers work leading to the Ph.D. and M.A. degrees in psychology. The applicant must fulfill the general requirements for admission to graduate status and in addition, at the time of application, must submit evidence of acceptable performance on three selection tests: the Verbal and the Quantitative Aptitude tests of the Graduate Record Examination, and the Graduate Record Examination in Psychology. The results from the Graduate Record Examination in Psychology *should be sent directly to the Department of Psychology.* Normally, all applicants will have an undergraduate major in psychology; however. outstanding students who have majored in other areas are encouraged to apply.

Doctor of Philosophy

The candidate must comply with the following departmental requirements. The student must complete a paper equivalent to a master's thesis even though he does not choose to obtain an M.A. degree. The student must satisfy a high criterion of performance in the proseminar and research courses (higher than that required for the M.A.) with a summary of research progress required during the first year. (At least one quarter of teaching experience is required). In the case of a student intending to pursue a career in teaching, the number of additional quarters to be required will be set by the student's adviser. The Phychology Specialty Examination must be passed before advancement to candidacy for the Ph.D. degree. In addition, the candidate must write an acceptable doctoral dissertation, satisfactorily complete the Doctoral Oral Qualifying Examination, and meet grade, residence and other University graduate requirements.

Career opportunities

Information concerning career opportunities in Psychology is available in the Department office or in the Career Resource Room at the Counseling Center.

Teaching credentials

Students who complete a major in this department may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Successful completion of an advanced degree in Psychology is required for issuance of the Community College Instructors Credential. Students interested in the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

The Department of Psychology, University of California, Santa Barbara, California 93106 Phone: (805) 961-2844 or 961-2791

Psychology

Instructors are listed with course offerings in the quarterly *Schedule of Classes.* Students should also consult with the Department for additional information.

Lower Division courses

1 • General Psychology (4)
An introduction to the subject matter and methods of psychology including the physiological basis of behavior, learning and memory, perception and cognition, social behavior and personality.

3 • Introduction to Experimental Psychology (5)
Prerequisites: Psychology/1 and 5. Priority given to majors in Psychology. Introduction to the planning and execution of experiments in psychology and to the analysis and interpretation of data.

5 • Analysis of Data in Psychology (5)
Prerequisites: Students must have passed the Test of Basic Mathematics for Psychologists (TBMP), or have completed Math/10 with a grade of C or better. Priority given to majors in Psychology. The TBMP is given during registration week each quarter. Information on how to prepare for the test, and the exact time of administration, are available in the Psychology Department office. Elementary statistical inference, including the Sign test, *Z* test, *t* test, correlation, and chi-square test. Simple descriptive statistics. The logic of statistical inference, including the central limit theorem and discussion of sampling distributions.

Upper Division courses

Group I. Courses in this category are survey lecture courses, have no prerequisites, and apply to credit for the major as specified. Prospective majors may take these courses as Lower Division students.

101 • Principles of Psychology (4)
Open to Upper Division students who do not have credit for Psychology/1. May be offered in substitution for Psychology/1 as a general education course and as the prerequisite for certain Upper Division courses. May not be taken after Psychology/1. A critical discussion of the major problems and points of view in psychology. Topics include motivation, perception, personality, and learning.

102 • Social Aspects of Behavior (4)
An introduction to social psychology including attitudes and group dynamics; role conflict, interpersonal influence, reference groups, communication and opinion change, motivated perception, and perception of persons.

103 • The Abnormal Personality (4)
Analysis of disorders with psychogenic components, including neuroses, anxiety states, character disorders, psychosomatic illness, and psychoses.

104 • The Exceptional Child (4)
The study of children with educational, physical, and emotional handicaps.

106 • Brain and Behavior (4)
May not be taken concurrently or after Psychology/113A, 113B, or 113L. An examination of contemporary research and theory dealing with the relation between the brain and psychological variables.

107 • Perception in Life and Thought (4)
May not be taken concurrently or after Psychology 110A, 110B, or 110L. Application of the principles of perception to the understanding of art, science, and contemporary life and their reciprocal influence on our understanding of perception.

108 • Learning and Memory (4)
The methods by which humans process, store, and retrieve information.

Group II This category includes intensive laboratory or lecture courses. Open to junior and senior psychology majors, others by permission of instructor.

110A • Perception (4)
Prerequisites: Psychology/1, 3, and 5 or permission of the instructor. The role of organizational processes, cue systems, and learning in the perception of object characteristics such as color, form, size, orientation, and distance.

110B • Perception (4)
Prerequisite: Psychology/5. The examination of sensory processes and the application of psychophysical methodology to study of the response to sensory information.

110L • Laboratory in Perception (5)
Prerequisites: Psychology/1, 3, and 5 and either 107 or 110A or 110B. A laboratory course emphasizing the formulation and testing of experimental hypotheses in perception as related to problems selected by the student to be of special interest to him.

111A • Learning (4)
Prerequisites: Psychology/1, 3, and 5. Principles of instrumental and classical conditioning, avoidance learning, stimulus generalization and discrimination, learning in man and other animals.

111B • Learning (4)
Prerequisites: Psychology/1, 3, 5 and 111A. This course will elaborate on topics discussed in course 111A, and will also cover concept learning, human memory, and problem solving.

111L • Laboratory in Learning (5)
Prerequisites: Psychology/1, 3 and 5, and either 111A or 111B. Students will perform a variety of experiments to illustrate and test the theoretical notions introduced in courses 111A and 111B. Lecture and laboratory.

112 • Social Behavior (4)
Prerequisites: Psychology/1, 3, and 5. A review of the major problem areas in experimental social psychology including attitudes, social conformity and influence, and social interaction.

112L • Laboratory in Social Behavior (5)
Prerequisites: Psychology/1, 3, 5, and 112. Methods, techniques, and typical experimental research in social psychology. Lecture and laboratory.

113A • Physiological Psychology (4)
Prerequisites: Biology/22 and Chemistry/25 or their equivalents; Psychology/1. (Psychology/106 is recommended.) The physiological mechanisms of behavior.

113B • Physiological Psychology (4)
Prerequisite: Psychology/113A or permission of the instructor. The physiological mechanisms of behavior.

113L • Laboratory in Physiological Psychology (5)
Prerequisites: Psychology/113A and 113B. A study of the techniques and experimentation in physiological psychology. Lecture and laboratory.

114 • Personality Dynamics (4)
Prerequisites: Psychology/1, 3, and 5 or permission of the instructor. Discussion of the role of unconscious mental forces in shaping personality. Case history materials and illustrative research included.

114L • Laboratory in Personality (5)
Prerequisites: Psychology/1, 3, 5, and 114. Topics of current interest in personality with concurrent experimentation, analysis of data, and preparation of laboratory reports.

Group III and Group IV Courses in this category are designed for the advanced student with special interests in substantive and theoretical areas of psychology.

115 • Conceptions of Intelligence (4)
Prerequisite: Psychology/5 or its equivalent. Historical consideration of intelligence and its measurement.

120 • Formal Models in Psychology (4)
Prerequisites: Math/10 or its equivalent; Psychology 1, 3, and 5. An analysis of selected mathematical and computer models of psychological processes with consideration given to the value and weaknesses of such theories in understanding behavior.

121 • Psychological Measurement (4)
Prerequisites: Psychology/1 and 5. Consideration both of the theoretical foundations of psychological measurement; including problems of reliability, validity, norms and prediction, and of the techniques by which aptitude, achievement, and personality tests are constructed and evaluated.

122 • Motivation and Emotion (4)
Prerequisites: Psychology/1 and either 108 or 111A. A study

of the basic principles of motivation worked out on the basis of infra-human subjects with references to tests on human subjects whenever possible. Do principles of animal motivation apply to man? Are additional principles required for man? These are two of the basic questions addressed. A competence in principles of learning is assumed.

123 • Developmental Psychology (4)
Prerequisites: Psychology/1, 3, 5 and 111A. Analysis of the influence of developmental processes on behavior.

124 • Comparative Psychology (4)
Prerequisites: Psychology/1, 3, and 5. Analysis of behavior of different species.

126 • History and Systems of Psychology (4)
Prerequisites: Psychology/1, 3, and 5 or permision of the instructor. Major stages in the emergence of various systems in psychology. Nineteenth century structuralism, functionalism, behaviorism, Gestalt psychology and psychoanalysis.

127 • Psychology of Language (4)
Prerequisites: Psychology/1 and 3 or permission of the instructor. The psychological nature of linguistic theory; linguistic structure as a factor in learning, perception, and comprehension; language acquisition; multilingualism; models of language.

128 • Human Thinking and Problem Solving (4)
An examination of theories and supporting evidence regarding the nature of human thought processes.

129 • Behavioral Approaches to Psychotherapy (4)
Prerequisites: Psychology/1 and either 103 or 114. An introduction to the basic principles and methods of behavior modification, including desensitization, operant conditioning, social modeling, expressive training, and aversion therapy. Related discussion concerning the identification of maladaptive behavior, the specification of treatment operations, and the criteria for assessing therapeutic change.

131 • Psychodynamic Approaches to Psychotherapy (4)
Prerequisites: Psychology/1 and either 103 or 114. (Students who have taken Psychology/129 or 160JP with Dr. Brams may not take this course.) An introduction to the basic concepts of psychodynamically oriented psychotherapy. Particular emphasis is directed toward the traditional psychoanalytic, as well as the neo-Freudian, approaches to the treatment of maladaptive behavior patterns.

132 • Sensory Psychophysiology (4)
Prerequisites: Biology/22; Psychology/1, and 106 or 113A. Physiological and psychophysical approaches to the study of sensory systems.

133A • Pharmacological, Endocrine and Biochemical Bases of Behavior (4)
Prerequisites: Biology/1A or 22 and Chemistry/25 or their equivalents; Psychology/1, and either 106 or 113A or Biology/105. (Students who have taken Psychology/133 may not take this course.) An examination of the effects on behavior of body chemistry, including genetic, endocrine, and pharmacological factors. Emphasis will be on physiological and biochemical mechanisms and their expression in "normal" and "abnormal" behavior, rather than a cataloging of drugs and behavioral effects.

133B • Pharmacological, Endocrine and Biochemical Bases of Behavior (4)
Prerequisite: Psychology/133A or permission of the instructor. (Students who have taken Psychology/137 may not take this course.) A continuation of the examination of the effects on behavior of body chemistry, including genetic, endocrine, and pharmacological factors. Emphasis will be on physiological and biochemical mechanisms and their expression in "normal" and "abnormal" behavior, rather than a cataloging of drugs and behavioral effects.

134 • Cooperation, Competition, and Conflict (4)
Prerequisites: Psychology/1, and either 112 or 102. A study of the psychological and social psychological bases of intragroup and intergroup cooperation, competition, and conflict in animal and human behavior.

135A—B—C • Field Experience in Psychological Settings (4,4,4)
Prerequisites: Psychology/1 and 103 or 114, senior majors, and *permission of the instructor.* Psychology/129 is recommended. The student must take 135A and 135B in sequence, while continuation in 135C is optional (and may be given Group III credit upon petition). Supervised field experience in settings providing psychological services with opportunities for observation and participation. Students will spend approximately 6 hours per week in psychological settings, attend weekly class meetings, read related material, and prepare written reports.

136 • The Psychology of Skill (4)
Prerequisites: Psychology/1, 3, 5, and either 107 or 110A or 110B. An analysis of motor coordination and information-processing skills from the points of view of underlying mechanisms, acquisition, and individual differences.

138 • Interpersonal Processes (4)
Prerequisites: Psychology/102 or 112. Students who have taken 160EI may not take this course. Review of research and theory in social perception and its influence on interpersonal relationships, including impression formation, attribution theory, self-perception, friendship formation and courtship.

141 • Perceptual Development (4)
Prerequisites: Psychology/1, 3, 5 and either 110A or 110B. Priority given to Developmental Psychology majors. An examination of the evidence concerning perceptual development from birth to maturity. Although results from both animal and human research will be considered, the emphasis will be on perceptual learning and development in the human. Such topics as the following will be considered: the effect of reduced and enriched environments on perceptual development, the sensory and perceptual abilities of the neonate, the evidence for critical periods, the development of spatial and object perception, the development of symbols and representations, perceptual disabilities, and the history and theories of perceptual learning and development as viewed in the general context of the nativism-empiricism controversy.

142 • Cognitive Processes and their Determinants in Children (4)
Prerequisites: Psychology/1, 3, 5, and either 108 or 111A. Priority given to Developmental Psychology majors. This course will review: 1) various theoretical descriptions of cognitive development from birth to maturity, and 2) the determinants of differences in cognitive functioning in children.

143 • Developmental Socialization (4)
Prerequisites: Psychology/1, 3, 5, 123, and either 112 or 138. Priority given to Developmental Psychology majors. Social development in infancy and childhood. Social influences on personality development, cognitive development, moral development, etc.

144 • Language Acquisition (4)
Prerequisites: Psychology/1, 3, 5, 123, and either 108 or 127. Priority given to Developmental Psychology majors. (Students who have taken Psychology/160ZL may not take this course.) Current theory and data concerning the language acquisition process will be reviewed. The course will focus on the development of phonology, syntax, semantics, and communicative ability. The works of Rimas, Chomsky, Brown, Glucksberg, Klaus, and others will be discussed.

150 • Advanced Analysis of Data in Psychology (5)
Prerequisites: Psychology/5. (Math 10, 3A, 30 or 34A recommended.) Application of statistical methods to the design and analysis of psychological investigations and to the interpretation of quantitative data in psychology.

151 • Computer Applications in Psychology (4)
Prerequisite: Sophomore, Junior or Senior Standing. Students who have taken Psychology/160 "Computer Appreciation for Psychologists," or 160DC may not take this course.

An introduction to computer programming and the utilization of computers in the investigation of human behavior.

160AA—ZZ • Special Topics in Psychology (4)
Course may be repeated an unlimited number of times providing letter designations are different. *However, only 8 units of major credit will be given.* Lectures in special areas of interest in contemporary psychology. Specific course titles to be announced by the department prior to each quarter.

161AA—ZZ • Undergraduate Developmental Psychology Practicum (8)
Prerequisites: Psychology/1, 3, 5, and 123, plus the preparatory lecture course as specified by the instructor. One half day, 4 days a week field experience at a local agency dealing with developmental problems, under the supervision of an appropriate staff member. One two-hour on-campus seminar per week dealing with the contributions and approaches of psychology and providing discussion of problems arising at the practicum agency, plus individual instruction where appropriate. Reading and preparation of a report tying together theory, method, and application in area of specialization. Course may be repated for a total of 16 units providing letter designations are different.

190AA—ZZ • Seminars in Psychology (2)
Prerequisites: Psychology/1, 3, 5, and permission of the instructor. Course may be repeated twice and up to 6 units major credit will be given providing letter designaions are different. Small group seminars in selected areas for advanced undergraduates. Students may suggest seminars to be organized under the direction and sponsorship of faculty members.

194 • Special Group Studies in Psychology (2-4)
Prerequisites: Psychology/1, 3, 5, and consent of instructor and Department chairman. No more than 4 units per quarter may be taken. Course may be repeated for a maximum of 12 units, providing titles are different. Students may apply only 12 units combined of 194 and 199 credit towards fulfilling the major requirements. Intensive study and research in a group situation. Limited to groups of 2 to 12 students.

* **198 • Undergraduate Seminar** (3)
Prerequisites: Psychology 1, 3, 5, and permission of the instructor. Course may be repeated for a total of 6 units. Special studies in the behavioral sciences by visiting scholars in residence. To be offered intermittently.

* **199 • Independent Studies** (1-5)
Prerequisite: Advanced status (junior level. B average in previous college work). Study or research under guidance of a member of the department. Students wishing to enroll should prepare a short plan of study for their course work.

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*See L-2 for 198/199 independent studies unit limitations.

199 courses are limited to no more than 5 units in one quarter and no more than 12 units may be applied toward fulfilling the major requirements. Students may apply only 12 units combined of 199 and 194 credit towards fulfilling the major requirements.

Graduate courses

Full graduate status in psychology or permission of the instructor is prerequisite to all graduate offerings.

221A • Design and Measurement (4)
Experimental design and statistical analysis in psychological research. Includes basic probability, sampling and distribution theory, hypothesis testing and estimation.

221B • Design and Measurement (4)
Prerequisite: Psychology/221A or permission of the instructor. Experimental design and statistical analysis in psychological research. Analysis of variance and related topics.

222 • Social Psychology and Decision Making (4)
Examination of conflict and cooperation, group effects on individual performance, subjective probability, choice and human information processing.

223 • Personality (4)
Structure, development, and dynamics of personality. Consideration of major personality theorists.

224 • Learning (4)
Introduction to contemporary methodological and theoretical developments in the field of learning.

225 • Motivation (4)
Analysis of contemporary theories and models of motivation.

226 • Developmental Psychology (4)
Introduction to contemporary developmental psychology. Although the emphasis is on human development, infrahuman development is included.

227 • Memory (4)
Analysis of selected topics in long-term and short-term memory.

228 • Perception (4)
Analysis of psychophysical relations in sensory processes with stress on detection, scaling, discrimination, spatial and temporal resolution and the interaction of cue systems in perceptual behavior.

229 • Physiological Psychology (4)
Examination of neural and endocrine mechanisms underlying vertebrate motivational systems.

230 • Psychophysiology of Vision (3)
Consideration of the physiological and psychophysical data bearing on the major features of vision in vertebrates.

231 • Advanced Techniques in Physiological Psychology (3)
Prerequisite: Psychology/229. Advanced techniques in behavioral research utilizing physiological methods, with particular emphasis on primates.

234 • Stimulus and Response Measurement (3)
Examination of the theory and practical problems of stimulus and response measurement in psychology.

235 • Psychophysiology of Audition (3)
Prerequisite: Psychology/229 or permission of instructor. Physiological and psychophysical approaches toward analysis of the hearing process.

242A • Hypnosis as a Research Tool (3)
Combined lecture-laboratory course on uses of hypnosis as a research tool in diverse fields of psychology. Students participate in screening of hypnotic subjects under supervision and also design and execute experiments in areas of their own special interest.

242B • Hypnosis as a Research Tool (3)
Prerequisite: Psychology/242A. Continued laboratory experience with students carrying out individual projects under supervision. Also discussion of hypnotic experiments growing out of a conceptual model of the mind.

243 • Behavior Modification (3)
Survey of behavior modification procedures and the theories underlying their development. Topics include systematic desensitization and variants thereof, assertive training, drugs, operant conditioning procedures, hypnosis, extinction procedures, and aversive conditioning. Prior familiarity with learning theories required.

244 • Psychopathology (3)
Experimental approaches to the etiology, processes, and modification of deviant behavior, with emphasis upon the psychoses.

248 • Seminar in Methodological Issues in Developmental Psychology (3)
Prerequisite: Psychology/226. An examination of the advantages, and limitations of various approaches to the study of the developing organism, including the comparative, the developmental, the cross-cultural, the ecological and the experimental-manipulative approach.

250 • Decisional and Social Processes (3)
A review of the psychological and social bases of decision making, choice behavior, and various patterns of social interaction.

251 • Research in Naturalistic Settings (3)
Readings, discussion and practical experience in designing and conducting experiments and quasi-experiments in field and other naturalistic settings; focus on related methodology, e.g., survey measures, unobtrusive measures, observation methods. Implications will be drawn for research on adult social behavior and attitudes, and for research on child socialization processes.

261 • Conceptual Problems in Psychology (3)
Analytic techniques of philosophy of science applied to historical and contemporary systems of psychology.

262 • Formal Models (3)
This course concentrates on mathematical models for behavior. Several specific models and programs are discussed in detail, and these formal theories are compared with more informal, verbal theories.

263A—B • Computer Simulation of Psychological Processes (3)
Prerequisite for 263B is 263A. An up to date review of research on computer simulation of psychological processes. Some of the processes to be considered in detail are thinking, learning, understanding teaching, dialogue, and conflict resolution.

264 • Computer-Assisted Instructional Systems (3)
A methods course in computer-assisted instruction.

265 • Comparative Behavior (3)
Analysis of behavioral and physiological data and theories through comparative methods.

271 • Spatial Perception (3)
An examination of experimental, methodological, and theorretical approaches to the study of the perception of extent and the interaction of spatial and other characteristics in the achievement of a stable visual world.

272 • Decisional Sequences (3)
The time-course description of information-processing and self-initiated activities, and the postulated underlying mechanisms.

594A—594Z • Special Topics (2)
Special seminar on research subjects of current interest. Each faculty member has his own letter designation which is the same as in the 599 series.

596A—596Z • Directed Reading and Research (2-8)
The purpose of this course is to provide supervised experience in experimental design and laboratory procedures on selected topics, including the formulation of experimental problems, discussion of relevant literature and the analysis and interpretation of experimental results. Minimum of two units per quarter. No more than half the graduate units necessary for the Master's Degree may be taken in 596. Each faculty member has his own letter designation which is the same as in the 599 series.

597 • Individual Study for Ph.D. Examinations (1-12)
Preparation for Ph.D. examinations under supervision of chairman of student's doctoral committee. Course is limited to no more than 24 units total.

598A—598Z • Master's Thesis Research and Preparation (2-6)
Research and preparation for the Master's thesis. Course is limited to no more than 12 units total. Since the student is already granted six units credit toward the degree, no unit credit will be given. Each faculty member has his own letter designation which is the same as in the 599 series.

599A—599Z • Ph.D. Dissertation Preparation (2-6)
Empirical and theoretical investigations of special problems in psychology in relation to dissertation preparation. Course is limited to no more than 12 units total. Each faculty member has his own graduate research course identified by the alphabet code following the course number, as follows:

G. S. Blum, 599B; M. B. Brewer, 599E; D. B. Bugental, 599N; H. J. Carlisle, 599C; B. M. Clopton, 599I; J. W. Cotton, 599W; J. M. Foley, 599F; W. C. Gogel, 599U; R. M. Gottsdanker, 599G; J. Higgins, 599H; G. H. Jacobs, 599J; H. H. Kendler, 599K; T. S. Kendler, 599T; R. L. Klatzky, 599X; R. E. Lasky, 599V; J. M. Loomis, 599D; E. P. Lovejoy, 599L; C. G. McClintock, 599Q; D. M. Messick, 599M; R. W. Reynolds, 599R; A. R. Sherman, 599Y.

Public and Social Affairs

Advisory committee

Gordon Baker, Ph.D., Professor of Political Science.
Sethard Fisher, Ph.D., Professor of Sociology, Chairman.
Perry Shapiro, Ph.D., Associate Professor of Economics.

Concerns of the program

Quality service in the public sector is a vital, growing requirement of our society. As the demand for governmental services grows, there is a corresponding call for able, humane leaders who are skilled and sensitive to the needs of the public they serve. The Master of Arts Program in Public and Social Affairs has been developed to prepare graduate students in the social sciences for careers in elective office or as administrators in government and public affairs.

The Master of Arts Program in Public and Social Affairs is interdisciplinary in approach, drawing from the resources of three major disciplines concerned with the quality of life in contemporary society. Course work in the fields of political science, sociology and economics is combined with the practical experience of internship with elected office holders and key administrators in policy-making positions of government. Courses in other fields may be substituted, depending on the interests of the individual student.

Undergraduate preparation for admission is comparable to that of students preparing for graduate work in the social sciences, including a sound background in the liberal arts and sciences. A major in one of the social sciences, with substantial background in related fields, is desirable.

Master of Arts

A total of 36 quarter units and a thesis are required. 28 of the 36 units will be comprised of two courses from two of the groups listed below, and three from the third. Eight of the units are devoted to a thesis, which comes out of the experience of a 20 hour a week internship, in local, state, or federal government. Throughout the internship year, students will work closely with an adviser on preparation of a thesis.

Economics

115 • Environmental Economics

120 • Urban and Regional Economics

123 • Urban and Regional Modeling

130 • Public Finance

131 • Public Sector Accounting

160 • Economics of Crime and Justice

165 • The Economics of Poverty

167 • Population Economics

205A and 205B • Economic Decisions

Political Science

215 • The American Government Process

251 • Policy Process

252 • Public Opinion & Political Participation

253 • Political Interest Groups

254 • Legislative Process

255 • State Government & Politics

257 • Urban Government & Politics

258 • Politics & Population

259 • Political Parties

260 • Judicial Process

291 • Public Admin. & Public Policy

Sociology

222 • Social Stratification

226 • Seminar in Human Ecology

228A—B • Selected Problems in American Racism

230 • Seminar in Social Change

231 • Seminar in Political Sociology

232 • Public Opinion and Mass Communication

239 • Sociology of Law

Religious Studies

Professors

D. Mackenzie Brown, Ph.D., Stanford; *(Emeritus)*.
Walter H. Capps, Ph.D., Yale; Western religious thought.
W. Richard Comstock, Ph.D., Union Theological Seminary; modern religious thought.
Gerald J. Larson, Ph.D., Columbia; history of religions (India), (Chairman).
Robert S. Michaelsen, Ph.D., Yale; religion in America.
Raimundo Panikkar, Th.D. (Rome) Ph.D. & D.Sc., (Madrid); comparative philosophy of religion; history of religions.
Birger A. Pearson, Ph.D., Harvard; Christian origins; Hellenistic religions.

Associate Professor

Wilbur M. Fridell, Ph.D., Berkeley; history of religions (East Asia).

Lecturers in Religious Studies

M. Gerald Bradford, C.Phil., UCSB; Western religious thought.
Bruce F. Campbell, C.Phil., UCSB, sociology of religion.
Richard Hecht, C.Phil., UCLA; Judaic studies.
Nandini Iyer, M.A., Oxford; Sanskrit; philosophy and history of religions (India).
Vincent Martin, Ph.D., Harvard; sociology: Roman Catholicism.
Charles Wendell, Ph.D., UCLA; Arabic, Islam.

Visiting Professor

Sidney E. Mead, Ph.D., Chicago; American religious thought and institutions.

Concerns of the department

The courses in Religious Studies are designed to provide students with the intellectual tools and scholarly background required for a critical understanding of the forms and traditions of religion that have appeared in human culture. The religious phenomena of preliterate cultures and of both Eastern and Western civilizations are analyzed.

The department recommends that the following courses would provide useful background for the major in Religious Studies: four units from History/46, 81, 86, 89; eight units from History/4A—B—C; four units from Art/6A—F; Philosophy/20A. Study of a foreign language is also advisable for prospective majors. The student is urged to consult with an adviser in order to choose the language which will be most useful, especially if interested in pursuing advanced study.

Bachelor of Arts

Preparation for the major

Students shall consult with their departmental adviser concerning their programs. Required: One Lower Division course in Religious Studies.

Upper Division major

Forty-eight units of Upper Division courses, of which a minimum of four must and a maximum of twelve may be selected from cognate courses in other departments. (Cognate courses must be selected in consultation with the majors adviser.) No more than eight units from the 159 sequence may be applied toward the total of 48 units required for the major. The Upper Division major must include the following specific requirements.

— A minimum of eight units in each of the following three areas:

a) Western Religious Studies/100, 103, 115, 116, 117, 119, 125, 126, 130, 131, 132, 133, 134A—B, 135, 136, 137, 139, 140A—B—C, 142, 143, 151A—B, 152, 174, 175, 180, 181, 182, 183, 185, 187, 188, 189.

b) Asian Religious Studies/149, 150, 155, 157A—B—C, 159A—B—C—D—E—F—J—K—L, 160, 161, 162, 163, 164A—B, 165, 166, 167A—B, 168.

c) Religion and Culture: 104, 113, 151A—B, 152, 156, 158, 163, 166, 167A—B, 168, 170, 171, 172, 173, 174, 175, 176, 177, 184.

Note: The same course units may not be used to fulfill the requirements in two different areas.

— Four units of Religious Studies/197 • Senior Seminar.

Master of Arts

The Department of Religious Studies regards its M.A. degree program as a general rather than a specialized program. It is designed for those interested in primary and secondary school teaching as well as for those interested in non-specialized graduate work in Religious Studies.

Admission In addition to fulfilling the general requirements for admission to graduate status, the Department will require an acceptable level of performance on the Aptitude Test of the Graduate Record Examination. Applicants are urged to take this test at their earliest convenience and to have the results forwarded to the Graduate Division.

Undergraduate preparation Students who do not have an undergraduate concentration in religious studies will be required to make up deficiencies by taking relevant undergraduate courses.

Foreign Language A reading examination in French or German must be passed before enrolling for a fourth quarter and before taking the comprehensive written examination. Information on methods for satisfying this requirement is available in the Department Office.

Course requirements Plan II, as described in the Graduate Division Announcement will be required of all students. This plan requires a minimum of 36 units of course work, of which at least 18 must be in graduate courses, and a comprehensive examination. Four units in Religious Studies/201, Pro-seminar in the Theoretical Approaches to the Study of Religion, are required. In connection with one or more graduate courses, the student must submit a substantial paper which will be placed on file for faculty review.

Written Comprehensive Examination It will consist of two parts. Part One will test the student for an educated general understanding of the substance of belief and attitude in western and non-western religions, and acquaintance with their basic scriptures and some significant commentaries upon them, studied in the context of modern scholarly analysis, and an awareness of strategic developments in religious thought. Part Two will be devoted to classical and contemporary theoretical approaches to the study of religion—phenomenological, sociological, historical, etc. This two-part examination will be based largely on significant works in these fields, a list of which will be distributed to the student early in the program. This examination may be repeated once. Upon successful completion of this comprehensive examination and the other requirements listed above the student will be recommended for the M.A. degree.

Doctor of Philosophy

The Department of Religious Studies of the University of California, Santa Barbara, offers a program leading to the Ph.D. degree. This program is designated, Cross-Cultural and Interdisciplinary Studies in Religion, and is divided into two areas of concentration, outlined below. The student seeking admission is advised to read the descriptions of these areas with care in order to be certain one of them fits the individuals particular needs and interests.

Cross-cultural and interdisciplinary studies in religion

Area I—Cross-cultural studies in religious traditions

This area of the program is concerned with the comparative study of religious traditions of eastern* and western* cultures. The purpose is to train scholars in Religious Studies who are equipped to deal critically and creatively with issues relating to religious experience and ideas in more than one cultural context. The intention, in other words, is not to train specialists in one area — e.g., Indologists, Near Eastern scholars, etc. — but, rather to develop the student's capacity for comparative analysis and reflection in two religious traditions so that the student is prepared to deal with issues arising out of the contemporary intermingling of cultural and religious traditions. Doctoral students pursuing work in this area will take courses and seminars which emphasize (1) the study of religious texts and other source materials, requiring philological competence;** (2) the study of methodology and hermeneutics; (3) comparative phenomenological, philosophical and theological investigation.

Competence in the sources and history of western thought is required by way of preparation for all students in Cross-Cultural studies. Beyond this, students will focus on (a) the sources and history of two major religious traditions, one of which may include some aspect of the European-American tradition; and (b) the various approaches and methodologies used in the scholarly study of religion. The selection of special areas within the various traditions will be determined by the student's own interests as well as by the competence of the faculty in Religious Studies and UCSB's cognate resources. For special language requirement in this area of the program, see below under Foreign Language.

Area II—Coordinated studies in religion and the humanities

As distinct from patterns of graduate training which concentrate on religious traditions or originate from within the social sciences, this area of the program focuses upon the humanities and deals specifically with aesthetic, linguistic and other symbolic forms. It functions to relate religion to the cultivation of intellect, imagination and sensibility as this is articulated in historical and contemporary, classical and modern humanistic arts of expression. It includes development of language skills, interpretation of texts, apprehension of visual shapes, rhythmical patterns and conceptual structures, awareness of mythic consciousness and logical capacity, knowledge of selected intellectual and cultural histories and appreciation for subjects and problems that lie in the borderlands between the traditional fields. Students are expected to do advanced work in one of the traditional disciplines — literature, art history and theory or philosophy — in addition to preparing themselves in the history and theory of religion, the history of western thought, and religious myth and language.

Admission On occasion the Department may admit a beginning graduate student directly into the Ph.D. program in one of the above-outlined areas. In addition to fulfilling the general requirements for admission to graduate status, the Department will require an acceptable level of performance on the Aptitude Test of the Graduate Record Examintion. Applicants are urged to take this test at their earliest convenience and to have the results forwarded to the Graduate Division.

Foreign Language Students must demonstrate a reading proficiency in French and German. Proficiency in both must be demonstrated before taking the oral qualifying examination. Students in Cross-Cultural Studies (Area I) will also have to demonstrate proficiency in at least one of the fundamental languages (ancient or modern) of the religious traditions in which their work centers.

Course work Students directly admitted into the doctoral program without the M.A. or its equivalent are required to take 36 units of advanced work (18 of which must be in graduate courses) in addition to the required course, Religious Studies/201, Proseminar in Theoretical Approaches to the Study of Religion. Selection of other courses is to be worked out by the student in consultation with an adviser. Minimum residence requirement for the Ph.D. is discussed in the current Graduate Division Announcement. A student admitted to the doctoral program who has the M.A. or its equivalent is required to fulfill only the minimum residence requirement for the Ph.D. as outlined in the *Graduate Division Announcement* together with the required course, Religious Studies 201, Proseminar in Theoretical Approaches to the Study of Religion.

Comprehensive examination A two-part written examination. Part one will be devoted to classical and contemporary theoretical approaches to the study of religion as well as to the history of western thought.* Part Two will be devoted to examining students in the area chosen for special study (i.e., Areas I or II).

Oral qualifying examination and admission to candidacy After passing the written comprehensive examination the student will be placed under the supervision of a doctoral committee which will be selected in consultation with the student's doctoral adviser and approved by the Graduate Council. The student shall present to this committee a dissertation proposal in which both the subject of research as well as the specific field-discipline to which that research will be correlated are clearly set forth.

The student must pass an oral examination administered by the doctoral committee. This examination will be designed to evaluate the student's fundamental knowledge of the area of concentration and the understanding of the relevant basic methodological principles.

Upon successful completion of these steps the student will be admitted to candidacy for the Doctor of Philosophy degree.

Doctoral Dissertation The candiate must write a dissertation under the supervision of the doctoral committee demonstrating an ability to do significant research and scholarly analysis and to present findings and conclusions with precision and clarity. If the committee so recommends, the candidate must defend the dissertation in an oral examination. The dissertation normally must be completed within five years after passing the qualifying examination.

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*These geographical designations are limited by the faculty resources of UCSB. "Eastern" is limited largely to certain aspects of South Asian and East Asian religion. "Western" is limited to certain aspects of Mediterranean, European and American religion.

**In addition to various European and Asian modern languages, UCSB offers instruction in the following ancient languages: Arabic, Chinese, Coptic, Greek, Hebrew, Japanese, Latin, Pali, Persian, Sanskrit and Tibetan.

*Reading list for comprehensive examination is availabe on request from the Department of Religious Studies.

Career opportunities

Professional careers in research and/or teaching are open in primary and secondary schools, colleges and universities. Religious studies graduates can also pursue careers in related areas — e.g., various forms of ministry, counseling, etc.

Teaching credentials

Students who complete a major in Religious Studies may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Successful completion of the M.A. or Ph.D. in Religious Studies qualifies the applicant to receive the Community College Instructors Credential. Students interested in the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Gerald J. Larson, Chairman, Department of Religious Studies, South Hall 4607, University of California, Santa Barbara, California 93106
Phone: 805/961-3578

Religious Studies

Lower Division courses

10 • The Religious Dimension of Man (4) Bradford
Man as a religious being; initiation, myth, prophecy, mysticism; the nature and function of religion; its relevance for contemporary man.

20 • The Religious Quest in Time (4) Bradford
The changing forms of religious life in tribes, nations, and civilizations. Study of selected African, Asian, European and American religious traditions.

40 • Religion and Society (4) Staff
The relationship of religious concepts and values to contemporary problems of individual behavior, political responsibility and international order.

Upper Division courses

100 • From Augustine to Luther (4) Capps
Study of the major themes, figures, patterns of thought, and artistic styles of medieval and early reformation christianity.

103 • Contemporary Trends in Religious Thought (4) Capps, Comstock
A survey of the growth and development of twentieth century religious thought and its historical background. Course may be repeated up to eight units.

104 • The Art of Religion (4) Capps
Study of selected visual components of eastern and western religious traditions.

113 • Religion and Film (4) Comstock
An examination of religious themes and forms as they appear in significant works of modern film. The nature of man, the problem of suffering, the quest for meaning are among the topics considered. Attention is paid to such questions of form as the presence of "myth" in film and the methods — like structural analysis — which can be used in their study.

115 • Literature and Religion of the Hebrew Bible (4) Hecht
Introduction to the varieties of literature, traditions and institutions of ancient Israel through the prophetic period.

116 • Christian Beginnings (4) Pearson
Study of the varieties of early Christian traditions and literature of the first century, with special (but not exclusive) attention to the New Testament.

117 • The Prophets (4) Staff
The origins, development and enduring significance of the prophetic movement in ancient Israel.

119 • Israel's Religion and the Ancient Near East (4) Pearson
Prerequisite: RS/115. A study of the religion of ancient Israel against the background of ancient Near Eastern religions.

125 • Roman Catholicism: Its Structure and History (4) Staff
An analysis of the litrugy, beliefs and organization of the Catholic Church and a consideration of the chief historical events that have influenced their development.

126 • Roman Catholicism in Modern Times (4) Staff
Prerequisite: RS/125. An analysis of the structure and functioning of the Roman Catholic Church, seen in the context of its historical situation. Contemporary situations and problems will be given emphasis but relevant background from the post-Tridentine period and especially the last century and a half will be considered.

130 • Judaism (4) Hecht
A study of basic structures and motifs (e.g., the Law, the Festivals, the Holy Land) within the history of post-Biblical Judaism.

131 • Palestinian Judaism from Ezra to Akiba (4) Hecht
Prerequisite: RS/115 or equivalent. Study of the various religious trends in Palestine from the time of Ezra to the second revolt, with special attention to the rise and development of apocalyptic.

132 • Judaism in the Graeco/Roman World (4) Pearson
Prerequisite: RS/115 or equivalent. Study of the cultural and religious interactions of Judaism with Hellenism among the Greek-speaking Jews of the Diaspora. Special attention will be given to the writings of Philo of Alexandira.

133 • Introduction to the History of Religions: Ritual (4) Hecht
A religio-historical study of the nature of ritual activity in a variety of religious traditions. Sacrificial rituals from archaic traditions of southeast Asia, Vedic India and the northwestern Semitic world will serve as the specific forms of ritual activity to be examined.

134A • Hellenistic Religions: The Hellenistic Period (4) Pearson
Historical and descriptive analysis of selected religious phenomena of the Hellenistic world: ruler cults, Greek cults and mysteries, religious developments in the Hellenized Near Eastern lands and the religious dimensions of Hellenistic philosophy. Emphasis is placed on the study of primary sources.

134B • Hellenistic Religions: The Roman Empire (4) Pearson
Historical and descriptive analysis of selected religious phenomena of the Empire, with special attention to the Oriental mystery religions, astrology, magic, alchemy, Gnosticism and the religious dimensions of philosophy in the Empire (especially neo-Pythagoreanism and neo-Platonism). Emphasis is placed on the study of primary sources.

135 • Second-century Christianity (4) Pearson
Prerequisite: RS/116 or equivalent. Study of the various religious trends in developing Christianity as represented in the writings of the early Fathers, the later books of the New Testament, the New Testament aprocrypha, and "heretical" movements.

136 • Judaism in Modern Times (4) Hecht
Prerequisite: Background in study of Judaism, or consent of instructor. Challenge of the Enlightenment and Emancipation movements to traditional Jewish life in Western and Eastern Europe. Religious and secular responses to these challenges (Orthodox, Conservative, Reform, Zionism, Socialism) in Europe and the United States.

137 • Judaism in the Medieval World (4) Hecht
Course covers period from 650-1500 CE and topics: Karaite movements; biblical and talmaudic commentaries; growth of mysticism and mystical movements; disputations between Christians and Jews.

138A • Religious Literature in Coptic (4) Pearson
Prerequisite: At least one year of Greek. An introduction to Sahidic-Coptic grammar, with special reference to the Coptic Gospel of Thomas.

138B • Religious Literature in Coptic (4) Pearson
Readings from the Gospel of Thomas and the Sahidic New Testament.

138C—D—E—F—G • Religious Literature in Coptic (4,4,4,4,4) Pearson
Prerequisite: RS/138A—B, or equivalent. Courses need not be taken in sequence.

C • Readings from selected **Subakhmimic Coptic texts**
D • Readings from selected **Sahidic texts** of the **Nag Hammadi Coptic Gnostic Library**
E • Readings from the ***Apophthegmata Patrum***
F • Readings from selected **Akhmimic Coptic texts**
G • Readings from the **Bohairic Coptic liturgies**

139 • The New Testament in Greek (4) Pearson
Prerequisites: Greek/104 (or 105) and 106 or permission of instructor. Reading in the Greek New Testament, with comparative study of related materials from Greek literature of the Hellenistic-Roman period (same as Greek 139).

140A • Islam (4) Wendell
Origins of Islam in 7th century Arabia and the life of the Prophet Muhammad; text and message of the Koran, and the fundamentals of Orthodox Sunnite belief and practice.

140B • Islam (4) Wendell
The major sectarian (heterodox) divisions within Islam, e.g., the Kharijites, and the Shi'a and its offshoots, and the cultural and historical conditions under which they arose; the mystical movement and its embodiment in the Sufi orders.

140C • Islam (4) Wendell
The impact of the West and its secular culture on Islam; the rise of new sects in the 18th, 19th and 20th centuries; modern Koran interpretation and the efforts to accommodate Islam to 20th century conditions.

142A • Religious Literature in Hebrew (4) Hecht
Prerequisite: One year of Hebrew or consent of instructor. Introduction to the narrative literature of the Hebrew Bible with special reference to Genesis 1-11. Special attention will be given to the principles of form criticism and the interpretative problems that surround this text.

142B • Religious Literature in Hebrew (4) Hecht
Introduction to poetry of the Hebrew Bible with special reference to cultic songs. Texts will be selected from Psalms, Song of Songs and Koheleth in order to examine the varieties of poetic style.

151A • Religion in American History (4) Michaelsen
Principal figures, groups, trends and issues in religion in America to 1865.

151B • Religion in American History (4) Michaelsen
Principal figures, groups, trends and issues in religion in America since 1865.

152 • Religion in America Today (4) Michaelsen
Recent trends in American religion and in interrelationships between religion and American society.

156 • Sociology of Religion (4) Staff
Religion as a social phenomenon; religious influence on the structure and dynamics of society; comparitison of various approaches to the study of religion. **Same as Sociology/156.**

157A • Religious Literature in Persian (4) Wendell
An introduction to the phonology, morphology and syntax of Classical Persian.

157B • Religious Literature in Persian (4) Wendell
Selected readings from Classical Persian religious texts.

157C • Religious Literature in Persian (4) Wendell
Selected readings from Classical Persian religious texts.

158 • Patterns in Comparative Religion (4) Panikkar

159A • Religious Literature in Sanskrit (4) Iyer, Larson
An introduction to the phonology, morphology and syntax of classical Sanskrit.

159B • Religious Literature in Sanskrit (4) Larson
Prerequisite: RS/159A. Readings from the *Mahabharata* and *Hitopadesa*.

159C • Religious Literature in Sanskrit (4) Larson
Prerequisite: RS/159A—B. Readings from the *Mahabharata* and *Hitopadesa*.

159D—E—F • Religious Literature in Sanskrit (4,4,4) Larson
Prerequisite: RS/159A—B—C, or equivalent. Courses need not be taken in sequence. Reading and analysis of classical Sanskrit religious texts.

159D • *Bhagavad Gita*

159E • *Samkhyakarika*

159F • *Yogasutra*

159J—K—L • Religious Literature in Sanskrit (4,4,4) Larson
Prerequisite: RS/159A—B—C, or equivalent. Courses need not be taken in sequence. Reading and analysis of classical Sanskrit religious texts.

159J • *Chandogya Upanisad*

159K • *Katha, Svetasvatara and Mandukya Upanisad*s

159L • Selected *Bhasya*s of Shankara

160 • Religious Systems of India (4) Iyer, Larson
Analysis of Vedic-Upanisadic-Epic traditions; Jainism and Indian Buddhism; six orthodox systems; Vaisnavism, Saivism and the Hindu Tantra.

161 • Yoga Traditions of India (4) Larson
Religio-historical analysis of classical Samkhya and Yoga, Jain and Buddhist Yoga and Tantric Yoga. Study of the role and function of meditation in Indian religion.

162 • Seminar on Shankara and Nagarjuna (4) Larson
Prerequisite: RS/160 or 161 or consent of instructor. Historical, thematic and comparative analyses of Advaita Vedanta and Madhyamika Buddhism.

163 • Problems in Comparative Mysticism (4) Panikkar
Historical and descriptive analysis of selected mystical traditions in South and East Asia, the Middle East, and Europe; and the study of selected key figures — e.g., Chuang Tzu, Sankara, Plotinus, St. John of the Cross, etc.

164A • The Buddhist Tradition (4) Larson
Origin and development of Buddhist tradition in India and South Asia.

164B • The Buddhist Tradition (4) Fridell
Prerequisite: Background in Indian Buddhism, or consent of instructor. Evolution of the Buddhist tradition in China and Japan.

165 • The Upanisadic Tradition of India (4) Iyer, Panikkar
Analysis and interpretation of the philosophical implications of selected Upanisads — primal myths, the doctrine of the Self, the mahavakyani, etc.

166 • Religion in Chinese Culture (4) Fridell
Emphasis on Confucian, Taoist and Buddhist traditions to the present day.

167A • Religion in Japanese Culture (4) Fridell
Prerequisite: Background in Asian Religions, or consent of instructor. Pre-history to 1600. The development of Shinto, and Japanese forms of Confucianism, Taoism and Buddhism. Emphasis on medieval Buddhist sects: Pure Land, Zen, Nichiren.

167B • Religion in Japanese Culture (4) Fridell
Prerequisite: RS/167A, or equivalent. 1600 — present day. Emphasis on religion and sacred values of the last century, especially prewar "familyism" and State Shinto, the "new religions" and the overall postwar scene.

168 • Man in Nature: E. Asian Views (4) Fridell
Elements of a philosophy of man in total environment, with attention to Chuang Tzu, Chinese painting, Shinto, Japanese folklore, Buddhist Mahayana philosophy and Zen.

169 • Zen (4) Fridell
A study of Buddhist philosophical presuppositions which underlie Zen teaching and practices; an examination of the practice itself, as it has evolved historically to the present day and an intensive exploration of a selected Zen text.

170 • Religion and the Humanities (4) Comstock
An examination of the relationship between religion and the humanistic disciplines with special emphasis on views of the nature of man.

171 • Religion and Literature (4) Comstock
An examination of religious themes as they are expressed in significant works of world literature. The nature of man, the problem of suffering, the quest for meaning, are among the topics considered through writings of Dostoevsky, Camus and others.

172 • Religion and Science (4) Comstock
The impact of Western science on religion; the implication for religion of contemporary discussions of meaning, truth and verification.

173 • Religious Myth and Language (4) Comstock
A survey of contemporary studies into the nature and function of religious symbol and language.

174 • Religious Thought and Existentialism (4) Comstock
An examination of the Nineteenth and Twentieth Century literary and philosophical movement of existentialism and its implications for philosophy of religion and theology. Typical figures like Kierkegaard, Sartre, Camus, Buber are examined.

175 • Pragmatism, Empiricism and Religion (4) Comstock, Bradford
A survey of important religious positions that have been based on an experiential and pragmatic orientation. Representative thinkers like W. James, J. Royce, G. Santayana, J. Dewey and A. N. Whitehead are examined.

176 • Religion and Modern Ideologies (4) Michaelsen
The conflicts and accommodations between the historic religious systems — Hinduism, Buddhism, Judaism, Christianity and Islam — and modern nationalism, communism, and fascism.

177 • The Religious Personality (4) Capps
Study of the cultural influence and personal characteristics of religious men as reflected in their diaries, journals, and autobiographical writings.

180 • Problems in the Philosophy of Religion (4) Iyer, Panikkar
A study of the religious dimension of philosophy and the philosophical aspect of religion. Relationship between religion and philosophy cross-culturally examined.

181 • The Theology of Paul Tillich (4) Comstock

182 • Ethics of the Life Cycle (4) Michaelsen
A study of contrasting models of the life cycle; rites of passage; moral problems associated with birth, growth, sex, work, leisure, aging and death.

183 • Psychoanalytic Interpretations of Religion (4) Capps
Treatment of Religion in Freud, Jung, and contemporary writers such as Erickson, Norman O. Brown and Robert Lifton.

184 • Myths and Symbols of the Sacred: A Study in Primordial Religiousness (4) Panikkar
An introduction to African, Asian and Western Religiousness. An investigation of the mythical nature of man and the symbolical nature of consciousness excerpted from ancient and modern traditions of mankind. Analysis of different theories in the Science of Religion.

187 • Ascetic Religion in the West (4) Capps
The religion of the hermitage and cloister from St. Anthony and St. Benedict. Special attention to current revivals of asceticism, western yoga traditions, east-west exchanges and the writings of Thomas Merton.

188 • Catholic Mystical Thought (4) Staff
Study of medieval Christian mystics including Bernard of Clairvaux, Eckhart, St. John of the Cross, St. Teresa, etc.

189 • Religion and Atheism (4) Panikkar
An analysis of Buddhist, Christian and Modern Atheism in the light of comparative religion. The place of God in religion and the nature of non-theistic religiousness.

194 • Group Studies For Advanced Students (1-5) Staff
Enrollment normally limited to 12 or fewer students.

197 • Senior Seminar (4) Staff
Prerequisite: Senior standing. An undergraduate seminar limited to senior religious studies majors. Concentration on method and selected topics in the scholarly study of religion. Four units required.

***199 • Independent Studies in Religion** (1-5) Staff
199 Courses are limited to no more than five units in one quarter and no more than 12 units total.

Graduate courses

201 • Proseminar in Theoretical Approaches to the Study of Religion (4) O'Dea, Comstock
Scholarly perspectives and disciplinary approaches to critical study and research in the history and theory of religion.

202 • Religious Literature in Pali (4) Larson
Prerequisite: RS/159A—B—C or permission of instructor. Phonology, morphology and syntax of the Pali language with readings of early Buddhist texts from the Pali Canon.

203 • Religious Literature in Tibetan (4) Staff
Prerequisite: RS/159A—B—C or equivalent. Phonology, morphology and syntax of classical Tibetan with readings from Tibetan Buddhist texts.

204 • Religious Literature in Vedic Sanskrit (4) Larson
Phonology, morphology and syntax of Vedic; and reading of *Rig Veda* I.1, I.32, X.90, X.129 and other hymns.

221 • The Formation of Religious Studies (4) Capps
Cross-disciplinary treatment of the origin and composition of religious studies as a distinct subject-field, from Muller, Frazer, Tylor and Durkheim to the present.

222 • Aesthetics of Religion (4) Capps
Analyses of art forms, conceptual models, paradigm formation, visual portrayal, projective techniques; correlations between art and religion.

235 • Seminar in Western Religious Thought (4) Capps
Historical and critical examination of selected figures and movements.

238 • Seminar in Modern Religious Thought (4) Comstock
Detailed examination of the intellectual structures of major nineteenth and twentieth century representatives of Western religious thought. Emphasis on methodologies and systematic form of basic positions.

224 • Problems in Religion and Society (4) Michaelsen
Prerequisite: Graduate standing or permission of instructor. Influence of religion upon society and society upon religion; institutional roles; transcendent referents; law and justice; value conflicts. Analysis of the thought of such figures as Weber, Troeltsch, Reinhold Niebuhr, H. Richard Niebuhr, J. D. Murray, Ellul and C. Dawson.

250 • Seminar in the History of Religions (Western) (4) Comstock
An intensive study of basic religious structures or symbols (e.g., patterns of initiation, ascension rituals, myths of primordial man). Material will be drawn from the traditions of Judaism, Christianity, Gnosticism, Greco-Roman religions and Mediterranean cults.

251 • Seminar in Hellenistic Religions (4) Pearson
Historical and critical examination of selected figures, texts and phenomena pertaining to Graeco-Roman religion. Reading knowledge of Greek required. Course content variable; may be repeated.

252 • Seminar in Christian Origins (4) Pearson
Prerequisite: RS/116 or equivalent. Course content variable; may be repeated. Historical and critical examination of selected figures, ideas and movements pertaining to nascent Christianity.

253 • History of Japanese Religion (4) Fridell
Bibliographical study of western language materials on Japanese religion; and individual research on a selected topic.

254 • Seminar on Vedic Scriptures (4) Panikkar
Prerequisite: RS/160 or permission of instructor. An analysis of the philosophical and religious motifs in the ancient Vedic texts of India. Research and discussion of the following: the Vedic sacrifice, the theory of creation, the views about man and the life of meditation.

255 • Seminar in Comparative Hindu-Buddhist Thought (4) Larson
Thematic and comparative analyses of Hindu theological traditions in India with Buddhist philosophical traditions in South and East Asia. Analysis of such problems as Hinduization, Sanskritization, Chinese Buddhist appropriation of Indian ideas and methodological presuppositions for cross-cultural study.

256A • Seminar in Cross-cultural Religious Anthropology (4) Panikkar
An interdisciplinary approach towards an integral understanding of man taken from the human experience of the various religious traditions of mankind. Focus on problems of methodology.

256A • Seminar in Cross-cultural Religious Anthropology (4) Panikkar
Sequel to 256A with focus on Primordial Myths.

256C • Seminar in Cross-cultural Religious Anthropology (4) Panikkar
Sequel to 256A and B with focus on Fundamental Symbols.

256D • Seminar in Cross-Cultural Religious Anthropology (4) Panikkar
Sequel to courses 256A, B, C. The hermeneutical problem in the contemporary world and its application to the understanding of different religious traditions, Pistohermeneutics.

256E • Seminar in Cross-Cultural Religious Anthropology (4) Panikkar
Sequel to courses A,B,C,D. Transcultural symbols. The value and meaning of a symbol as a transcultural factor.

256F • Seminar in Cross-Cultural Religious Anthropology (4) Panikkar
Sequel to A,B,C,D, and E. Seminar will be on development and history of the language of dialectics.

257 • Seminar in Buddhist Studies (4) Staff
Historical, philosophical and bibliographic analysis of selected traditions within Buddhism. Also, consideration of the relation of Buddhist traditions to related phenomena within Hinduism.

258 • Seminar in Religion in America (4) Michaelsen
Intensive study of major figures and significant movements in the context of American culture.

270 • Seminar in Religious Myth and Symbol (4) Comstock
A detailed survey of important approaches to religious myth and symbolism. The various methods of literary analysis and anthropological and sociological study, linguistic analysis and the phenomenology of religion, will be considered.

271 • Seminar in Aesthetic Dimensions of Religion (4) Capps
Analyses of visual design, models of spatial arrangement and structural investion as these pertain to form synthesis in religion.

290 • Seminar in Major Texts and Figures (4) Comstock
Seminar focuses on an intensive study of a major text or figure within a religious tradition (e.g., Aquinas) or within the field of Religious Studies (e.g., Feuerbach).

594AA—ZZ • Special Topics (2-4) Staff
Special seminar on research subjects of current interest.

595AA—ZZ • Group Studies (1-4) Staff
Critical review of research in selected fields.

596AA—ZZ • Directed Reading and Research (2-5) Staff
Research and Preparation of Dissertation.

598AA—ZZ • Master's Thesis Research and Preparation (2-5) Staff
For research underlying the thesis, writing the thesis.

599AA—ZZ • Ph.D. Dissertation Preparation (2-6) Staff
Terminal preparation of the dissertation.

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*See L/2 for 198/199 independent studies unit limitations.

Renaissance Studies

Advisory Committee*

Keith Aldrich, Ph.D., Professor of Classics.
Jose Luis L. Aranguren, Ph.D., Profesor of Spanish.
Edgar Bowers, Ph.D., Professor of English (Committee Chairman).
Walter H. Capps, Ph.D., Professor of Religious Studies.
William Frost, Ph.D., Professor of English.
Enrique Martinez-Lopez, Ph.D., Professor of Spanish.
Alfred K. Moir, Ph.D., Professor of Art.
Phillip W. Powell, Ph.D., Professor of History.
Winston Reynolds, Ph.D., Professor of Spanish.
Jorge de Sena, Ph.D., Professor of Portugese and Comparative Literature.
Arturo Serrano-Plaja, L.L., Professor of Spanish.
Homer D. Swander, Ph.D., Professor of English.
Ronald W. Tobin, Ph.D., Professor of French.
Sheridan Blau, Ph.D., Associate Professor of English.
Alfredo A. Bonadeo, Ph.D., Associate Professor of Italian.
Francis A. Dutra, Ph.D., Associate Professor of History.
Abraham Friesen, Ph.D., Associate Professor of History.
Mireya Jaimes-Freyre, Ph.D., Associate Professor of Spanish.
Peter T. Meller, Ph.D., Associate Professor of Art.
Russell Astley, Ph.D., Assistant Professor of English.
Norman B. Council, Ph.D., Assistant Professor of English.
Christopher F. Givan, Ph.D., Assistant Professor of English.
Richard Helgerson, Ph.D., Assistant Professor of English.
Lawrence L. Levin, Ph.D., Assistant Professor of English.
J. Sears McGee, Ph.D., Assistant Professor of History.
Michael W. O'Connell, Ph.D., Assistant Professor of English.
Robert Potter, Ph.D., Lecturer in Dramatic Art.

Concerns of the program

The major in Renaissance Studies is an interdisciplinary program intended to serve students interested in an undergraduate liberal arts major as well as those who plan to pursue graduate studies in the field. With the assistance of members of the Advisory Committee, students will set up individual programs structured around their special interests. Students should consult with their advisers each quarter from the beginning of their junior year to have their programs formally approved and to inform themselves concerning various special Renaissance courses. Students are also encouraged to attend the extracurricular lectures and discussions sponsored by the faculty-student Renaissance Club.

Bachelor of Arts

Preparation for the major

Required: A reading knowledge of Latin or a modern European language to be certified by examination. History/4A or Classics/100A—B (If Classics/100A—B is completed, four of these units may be applied to the 40 Upper Division units required in the major.)
Recommended: Art/6C; Classics/37, 38, 40; English/20 or 46A

Upper Division major

Forty Upper Division units are required, including: (1) History/120A—B (to be completed as soon as possible after entrance into this major) and (2) Renaissance Studies/100. Twenty-eight additional units from the following list, the selection to consist of related courses forming a coherent program and to be approved by a member of the Advisory Committee.

Art/155B, 156A—B—C—D
Classics — A maximum of 12 units to be chosen in consultation with a faculty adviser. (Students who completed Classics/100A—B in preparation for the major may apply four of these units to this area.)
Comparative Literature/105, 110A—B
Dramatic Art/160B, 162
English/102A, 117A—B—C—D—E, 146, 151D, 151S, 157, 162
French/140A—B—C, 141X**
Italian/111A—B—C, 112A—B—C, 116X*, 116Y*, 116Z*
History/106A, 118, 140A—B, 140Q, 150A—B, 153, 154A, 155A, 156A
Music/102, 180
Portuguese/105A—B, 114, **132A—B
Religious Studies/100, 125
Renaissance Studies/190, 199
Spanish/115A • Foreign Literature in Translation, 123A, 131A—B, 134A—B, 137A—B, 140A—B, 141A—B, 145, 191A—B

Correspondence information

Chairman, Renaissance Studies Program, University of California, Santa Barbara, California 93106. Phone: (805) 961-3441.

Renaissance Studies

Upper Division courses

100 • Medici Florence (4)
A course on Florence in the fifteenth and early sixteenth centuries, intended to serve as an introduction to the interdisciplinary study of Renaissance civilization.

190 • Studies in Renaissance Civilization (4)
An interdisciplinary course on some particular aspect of Renaissance civilization. May be repeated for credit.

199 • Independent Studies in the Renaissance (1-5)
Study or research under the guidance of a member of the Advisory Committee for seniors of high scholastic standing. Students wishing to enroll should prepare a short plan of study for their course work. Not more than five units of Renaissance Studies/199 may be taken in one quarter and not more than 12 units total.

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*See appropriate departmental entries for faculty information.
**Foreign Literature in Translation.

Russian Area Studies

Advisory Committee*

Dimitrije Djordjevic, Professor of History.
John E. Estes, Assistant Professor of Geography.
Donald B. Johnson, Associate Professor of Russian.
James C. McClelland, Assistant Professor of History.
Stanley D. Krebs, Associate Professor of Music.
Robert G. Wesson, Professor of Political Science.

Concerns of the program

The major in Russian Area Studies is an interdepartmental major which can be taken by a student only in conjunction with another departmental major (at this point: economics, history, political science and Russian). The major aims at the provision of a broad interdisciplinary background designed to enrich the student's professional training provided by a department. It is intended to serve the needs of the student who wishes to pursue further graduate study or who desires to obtain a general education with a greater emphasis on an important world area.

Bachelor of Arts

Preparation for the major

Forty units are required in the Lower Division: Russian/1, 2, 3, 4, 5, 6 (or equivalent), Russian/32, and History/4A—B—C. Recommended: Political Science/45.

Upper Division major

Thirty-seven units are required in Upper Division courses including: History/135A—B—C, Political Science/128, 143, and Russian/115A—B, 125. Select at least five units from the following electives: Economics/107, 117, Geography/155, History/124A—B—C, 127A—B, 134A—B, 135Q, Music/113, and Russian/132, 140.

The student must show proficiency in Russian equivalent to completion of Russian/101C. The requirement may be satisfied either by completion of that course with a grade C or better or by examination.

The program, of course, is to be made out by each student in cooperation with one of the members of the Committee who would normally serve in the department of the student's allied major.

Correspondence information

Russian Area Studies, Department of Germanic and Slavic Languages, Phelps Hall, Room 6331, University of California, Santa Barbara, California 93106 Phone: (805) 961-3787 or 961-2131

Social Sciences

Advisory Committee

Donald E. Brown, Ph.D., Associate Professor of Anthropology*.
John M. Foley, Ph.D., Associate Professor of Psychology* (Committee Chairman).
Alfred M. Gollin, D. Litt., D. Phil. (Oxon.), Professor History*.
John E. Moore, Ph.D., Associate Professor of Political Science*.
John A. Sonquist, Ph.D., Professor of Sociology*.

Majors in the following fields of the social sciences are available and are described in the appropriate departmental entries in this catalog: anthropology, economics, geography, history, political science, and sociology. Students with interests in these fields are invited to visit the department offices for additional information.

Concerns of the program

The major in Combination Social Sciences exists to serve the needs of those undergraduates who prefer to explore a broad spectrum of the social sciences, obtaining an acquaintance with socio-cultural, economic, and political aspects, along with a greater concentration in one area of study. However, it is not recommended for students who expect to do graduate work in one of the social sciences.

A student who wishes to major in Combination Social Sciences must select a primary and two secondary fields of emphasis within the social sciences, as described in the Upper Division major below. An adviser will be assigned to each student in this major within the department of primary emphasis, chosen from anthropology, economics, geography, history, political science, or sociology.

Bachelor of Arts — Combination Social Sciences

Preparation for the major

All students in this major must complete requirements 1 through 5.

1 - History/4 A—B—C.

2 - One course from: Anthropology/2 or 101, 3, 102; Sociology/1 or 101, 2.

3 - One course from: Political Science/12 (or 5 and 10 or 100), 45; Geography/2.

4 - Either Economics/1 and 2 or 109 (but not both) or Economics/110.

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*See appropriate departmental entries for Faculty information.

5 - One additional course from 2, 3 or 4 to comprise two courses in the student's field of primary emphasis, except for those emphasizing history, who may take any Lower Division history course. (For this purpose the sequences Political Science/5-10 and Economics/1-2 each count as one course.) Students emphasizing geography must take Geography/101.

Upper Division major

Forty Upper Division units are required, including at least 24 units in the subject field of primary emphasis (i.e. anthropology or economics or geography or history or political science or sociology) and eight units each in two additional subject fields of secondary emphasis chosen from anthropology or economics or geography or history or political science or sociology. (Eight units of Upper Division courses in social philosophy, or social psychology may be substituted for *one* of the two areas of secondary emphasis, provided that they have been preceded by appropriate introductory preparation, and have been specially approved by petition to the Committee Chairman.)

Anthropology/101, Economics/109, Political Science/100 and Sociology/101 are not acceptable for Upper Division credit in this major.

Career opportunities

The student should seek information regarding career opportunities from an undergraduate adviser in the field of primary emphasis.

Teaching credentials

Students who complete a major in Combination Social Sciences may be eligible for pursuing a California teaching credential. Consult with the credential adviser in the department of emphasis for specific departmental requirements.

Details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Correspondence information

Refer all inquiries to the office of intended primary emphasis. See departmental catalog entry for correspondence information.

Sociology

Professors

Donald R. Cressey, Ph.D., Indiana, theories of crime and criminality, criminal justice, correctional organization and change.

Sethard Fisher, Ph.D., Berkeley; interpersonal and intrapersonal aspects of racism, forms of oppression and social policy.

[3]*David Gold,* Ph.D., Chicago; political sociology, public opinion, mass communication, community decision-making.

Thomas J. Scheff, Ph.D., Berkeley; mental illness, social psychology.

Tamotsu Shibutani, Ph.D., Chicago; collective behavior, social psychology.

[1,2]*John A. Sonquist,* Ph.D., Chicago; organizational analysis, networks and social structures.

Associate Professors

John D. Baldwin, Ph.D., Johns Hopkins; socialization, social psychology, behavior modification, animal behavior.

Robert H. Billigmeier, Ph.D., Stanford; interethnic relations, social movements.

Richard Flacks, Ph.D., Michigan; political sociology, social movements

[1,3]*Morris F. Friedell,* Ph.D., Chicago; humanistic sociology.

[4]*Harvey L. Molotch,* Ph.D., Chicago; urban growth, local politics, media studies.

Gary I. Schulman, Ph.D., Stanford; risk-taking behavior, attitude formation, experiments.

Bruce C. Straits, Ph.D., Chicago; demography: fertility, migration, urban; social research techniques.

[2,3]*Thomas P. Wilson,* Ph.D., Columbia; ethnomethodology, theory and research methodology.

[2,3]*Don H. Zimmerman,* Ph.D., UCLA; ethnomethodology, conversational analysis, observation of natural settings.

Assistant Professors

[1,2]*Richard P. Appelbaum,* Ph.D., Chicago; urban problems, community development, critical theory.

[3]*Bettina J. Huber,* Ph.D., Yale; women's studies, social psychiatry, sociology of the future, comparative societies.

Robert B. Smith, Ph.D., Columbia; political and organizational sociology, research methodology and theory construction.

D. Lawrence Wieder, Ph.D., UCLA; ethnomethodology, phenomenological and existential sociology, sociology and psychotherapy.

Acting Assistant Professors

Michelle Patterson, M. Phil., Yale; sociology of education, women's studies, complex organizations.

John L. Weiler, M.A., SUNY at Stony Brook; social psychology, education.

Lecturers

Reynaldo R. Baca, Cand. in Phil., Berkeley; sociology of education, ethnic and cultural minorities, social psychology, sociological theory and research methods.

Tetsuden Kashima, M.A., San Francisco State; race and ethnic relations, comparative societies (Japan), protest and social movements.

Concerns of the department

The sociology major is designed to provide (1) preparation for careers in various fields (see Career Opportunities below), or (2) to provide the core of a general liberal arts education for students having concerns with contemporary society, its problems, and the human quest for a just and rational social order, or (3) a preparation for graduate study for a career as a professional sociologist. The requirements for the Sociology major are designed to permit students to get a basic grounding in the nature and methods of the discipline while providing wide latitude for the individual student to pursue or explore individual interests.

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[1] Absent on leave Fall 1975
[2] Absent on leave Winter 1976
[3] Absent on leave Spring 1976
[4] Absent on leave 1975-76
[5] In residence 1975-76

Bachelor of Arts

Preparation for the major

Required courses: (1) Sociology/1, 2 (Sociology/101 may be substituted for Sociology/1); (2) Sociology/42A—B; (3) one of the following sequences: (a) Anthropology/2 and one additional course in Anthropology (except physical), (b) Economics/1, 2 (c) History/4A—B—C, (d) Political Science/5, 10 and 45, (e) Psychology/1 and one Upper Division Psychology course. Courses taken in preparation for the major (except Sociology) may be used to satisfy the appropriate General Education Requirements.

Upper Division major

To qualify as an Upper Division Sociology Major, students *must have completed* Sociology/1 (or 101), 2, 42A—B, or equivalents.

Required 36 units of Upper Division Sociology courses. In certain cases a maximum of nine units of Upper Division work in closely allied fields as part of the required total of 36 units may be taken. These units must be approved by petition. Students may take up to eight units of the following courses on a P/NP basis: 191A, 194, 198, 199, or AEP/191 courses given by sociologists. Sociology/150 will not count towards the major. (Only 4 units of Sociology/119A—B—C can be applied to the Upper Division major.)

Recommended Students intending to engage in graduate study in Sociology should take Sociology/44, 103, and 104A—B. They are urged in addition to take Mathematics/30A (for more intensive preparation Mathematics/8—9 and 108A—B).

Master of Arts

The M.A. program in sociology is oriented toward the Ph.D. program and is viewed as an integral part of preparation for the doctorate. Students should normally apply for admission to both programs. Prospective applicants should inquire early in the academic year concerning deadlines for submission of applications for admission and financial support.

Admission In addition to the information required in the application for admission to graduate status in the University, the applicant must submit scores on the verbal and quantitative aptitude tests of the Graduate Record Examination.

Applicants are expected to have training substantially equivalent to the undergraduate major in this department, including research methods, statistics, and the development of sociological theory. Students with inadequate backgrounds in these areas may be admitted but are expected to make up serious deficiencies as early as possible in their first year.

Departmental requirements The M.A. degree is awarded according to *Plan II* of the University: 36 units of course work, of which at least 18 are graduate units, and a Comprehensive Examination.

Prior to the Comprehensive Examination, the student must submit a short research paper (not a thesis), prepared under the supervision of an Advisory Committee of three faculty members, and have satisfied the Advisory Committee's recommendations concerning the breadth and intensiveness of preparation in sociology, including theory, research methods, and formal analysis techniques (usually statistics, mathematics, modern logic, or linguistics). Required course work must be completed by the end of the quarter in which the examination is taken.

To receive the M.A. degree, the student must receive a "pass" or higher grade on an oral Comprehensive Examination. To continue in the Ph.D. program, a student must receive a "high pass" or an "honors pass." The M.A. program should normally be completed by the end of the second year, but a student may petition for an extension.

Doctor of Philosophy

Admission

All candidates are expected to have substantially equivalent training as required for the B.A. in this department — 36 units of Upper Division work in sociology, including courses in research methods, statistics, and the development of sociological theory. In addition to fulfilling the general requirements for admission to graduate status, the student must submit scores on the verbal and quantitative aptitude tests of the Graduate Record Examination.

Departmental Requirements

To be admitted to the program, the student must complete the Department's requirements for the M.A., or the equivalent. Students may be admitted to graduate study in the Department without admission to the Ph.D. program pending completion of these requirements; however, these must be completed by the end of the second year.

A requirement for the Ph.D. is a demonstration of competence in research methods appropriate to the student's area of major specialization. This requirement may be met by: (1) Examination, (2) passing, with a grade of B or higher, one of Sociology/201A, B, or C, or an approved alternative course (e.g., linguistics, computer programming), together with (3) approval by one faculty member of a research paper typically initiated in Sociology/201 and completed in a subsequent quarter of Sociology/596; alternatively, this requirement may be met by an M.A. research paper demonstrating appropriate research competence.

No language is required, but a student whose speciality requires knowledge of foreign languages will be required to demonstrate competence.

Each student must pass a written preliminary examination in two areas of specialization. In consultation with the examination committee, the student will prepare a bibliography in the selected areas and submit it to the committee for approval. The preliminary examination will be based on these approved bibliographies. The preliminary examination normally must be taken within 18 months after admission to the Ph.D. program. Under special circumstances, a student may petition for an extension.

The student must pass a qualifying oral examination following the preliminary examination, administered by a committee appointed by the Graduate Council, normally focusing upon the student's major area of specialization and particularly on the proposed research.

The candidate must complete a doctoral dissertation. Normally, the individual will be called upon for an oral defense of this dissertation.

Career opportunities

The major is designed to provide undergraduate preparation leading to careers in law, management, journalism, social work, urban and environmental planning, public service, teaching, corrections, mental health, counseling, and other service professions.

Teaching credential

Students who complete a major in this department may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Successful completion of an advanced degree in Sociology is required for issuance of the Community College Instructors Credential. Students interested in the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Department of Sociology, University of California, Santa Barbara, California 93106 Phone: (805) 961-3314.

Sociology

Lower Division courses

1 • Social Organization (4) Staff
The systematic study of human society; the structure of social groups, institutions, and societies, and their relationships to cultural patterns.

1FS • Freshman Seminar (3) Molotch
We will combine topics ordinarily taken up in urban economics, city planning and urban sociology in order to focus upon the political economy of American urban places. We will ask questions regarding tax sources, service deployment, growth mechanisms and the quality of life. Stress will be placed upon seeking alternatives to present arrangements. Implications for Isla Vista and Santa Barbara will be discussed.

2 • Society and Personal Growth (4) Staff
Prerequisite: Sociology/1, or consent of instructor. The introduction of the individual into group life; the organization and perspectives of personality; the social control of conduct.

2FS • Freshman Seminar (3) Flacks
Youth is considered as an historically evolved stage in the life cycle of individuals, and as an historically evolved social category. Topics include: historical factors in the convergence of youth; varieties of youth "culture"; crisis of identity and their resolution; youth as agents of historical change.

3FS • Freshman Seminar (3) Weiler
Prerequisite: Consent of instructor. There will be three main topics: society, the University, and the discipline. Some of the sub-topics: social and personal responsibility, the University and social change, departmentalization of knowledge, decision-making in the University, clientele of University, concept of academic freedom, student power, ethnic and other minorities, organization of profession of sociology, and professional vs. liberal education.

40 • Introduction to BASIC Programming (2) Wilson
Course will offer an introduction to interactive programming. The language to be taught is BASIC. Class is designed to be taken concurrently with Sociology 42AB, 43, 44, or 104AB. It will be open to undergraduates in other departments who are interested or required to enroll.

42A—B • Empirical Sociological Inquiry: An Introduction to Field and Quantitative Methods (4,4) Staff
A two-quarter sequence introducing basic concepts and methods of sociological research, including field observation, surveys, and experiments. Techniques of gathering data, problems of interpreting sociological observations in relation to theory. The sequence is designed as a single two-quarter course, and students must take 42A and B in consecutive quarters in the same academic year.

43 • Introduction to Social Research (4) Staff
Prerequisite: One course in sociology, anthropology, or political science, or consent of the instructor. Assumptions underlying scientific research, science and values. Relations of theory to research. Elements of field-work, survey, and experimental methods.

44 • Elementary Statistics (4) Wilson
Prerequisite: Sociology/43. Techniques for describing and analyzing quantitative data. Tabular and graphic presentation; commonly used measures of association; samples and sampling error; commonly used statistical tests.

45 • American Society (4) Staff
Contemporary issues in American society from a sociological perspective.

48 • Social Problems (4) Staff
This course will analyze the sources of social problems in modern industrial societies. We will discuss in survey form the sociological studies and theoretical propositions dealing with such things as crime, mental illness, war, urban problems, and problems of inter-nation relations.

Upper Division courses

Prerequisite to Upper Division courses: Sociology/1, or Sociology/101, 2, 42A and 42B, or equivalent, or consent of the instructor for students who are not sociology majors.

101 • General Sociology (4) Staff
The major concepts, principles, and problems of sociology. Not open to those who have had Sociology/1.

102 • Sociology, The University and Society (4) Staff
There will be three main topics: Society, the University, and the Discipline. Some of the sub-topics: Social and Personal Responsibility, the University and Social Change, Departmentalization of Knowledge, Decision-Making in the University, Clientele of University, Concept of Academic Freedom, Student Power, Ethnic and Other Minorities, Organization of Profession of Sociology, and Professional vs. Liberal Education.

103 • Methods of Sociological Research (4) Staff
Prerequisites: Sociology/42A and 42B or equivalent. Fundamentals of designing, conducting, and analyzing social surveys. While the main focus is on survey techniques, problems of design and interpretation in experimental and observational studies are touched upon in terms of similarities and contrasts.

104A—B • Intermediate Statistics (4,4) Straits
Prerequisites: Sociology/42A and 42B or equivalent. Nonparametric statistical inference, point and interval estimation, multiple regression and path analysis, and analysis of variance in experimental designs.

105 • Laboratory in Group Research (4) Schulman
Prerequisites: Sociology/103 and 143, or consent of instructor. Practicum in laboratory methods of research in the behavior of small groups.

106 • Simulated Behavioral Processes (4) Baldwin
Prerequisite: Consent of the instructor. Applications of simulation and gaming methodologies in the analysis of social and political processes. This course is the same as Political Science/106.

107 • Demographic Analysis (4) Straits
Prerequisite: Sociology/123, or consent of instructor. Analysis of published demographic research with special reference to the accuracy of data from censuses and other sources; standardization and other methods for controlling differences in population composition; computation and use of rates and indexes, population estimates and projections.

108 • Introduction to Mathematical Sociology (4) Staff
Prerequisites: Mathematics/30 and any two Upper Division courses in sociology, or the consent of the instructor. Analysis of social systems through the use of mathematical tools; survey of structural, quantitative, and stochastic models.

109A • Introduction to Computing for Social and Behavioral Sciences (4) Sonquist
Introductory Computer Science concepts, programming principles and fundamentals of digital computers and information processing. Mathematical background not required.

109B • Computer Applications in the Social Sciences (4) Sonquist
Prerequisites: Sociology/109A, EE/3A, EE/5, Mathematics/6A, or equivalent, or consent of instructor. Survey of computer applications in the social sciences: statistical analysis, research data management, simulation, control of experiments, content analysis and analysis of text, information retrieval, etc.

109C • Special Topics in Computer Applications in Social Science (4) Sonquist
Prerequisites: Sociology/109A, EE/5, or equivalent, or consent of instructor. An advanced course dealing with topics selected by the lecturer. The emphasis will be on areas of computer applications within the social sciences such as research data base management, statistical computation, computer control of experiments, content analysis, information retrieval, and simulation of social systems. May be taken for no more than three quarters.

110 • Data Proccessing and Analysis (4) Staff
Prerequisites: Sociology/42A and 42B. Course will focus on basic principles of data organization and statistical analysis employing computer based research techniques. Students will learn how to utilize available user-oriented statistical programs as an integral part of the research process.

111 • Computers and Society (4) Sonquist
The course is an introduction to computers, their applications, and their impact on men and social institutions. The main objective of the course is to provide the student with

factual and technical information to give him the ability to make reasoned judgments about computer use, to show him the social problems computers are creating along with possible remedies, and to urge him to think constructively and creatively about technology, its uses, and its social impact.

112A—B • Practicum In Social Research (4,4) Staff
This two-quarter sequence deals with study design, conceptualization, measurement, and data collection. Students will be working on a single research project conducted over two quarters.

113 • Systems Analysis and Information System Design (4) Sonquist
Prerequisites: EE/3A EE/5, Mathematics/6A, Sociology/109A or approval of instructor. Introduction to principles and techniques involved in the analysis of information processing requirements of large-scale organizations and the development of computer-based information systems. Includes overview of implementation, control, and evaluation phases.

115 • Minicomputer-based Computer-aided Instruction Systems (4) Howard, Wood, Attala, Sonquist
Prerequisites: Senior standing, or consent of instructor. For students who plan to utilize computers as teaching tools. Computer fundamentals, developing skill in a programming language. Programming techniques with applications to educational problem-solving strategies. Techniques of utilizing the computer to assist in providing individualized instruction. CAI history, modes, languages, software and hardware requirements. Methods of developing courseware. Economics of CAI systems. This course is the same as EE/115.

118 • Electoral Politics (4) Gold
An examination of theoretical and practical issues involved in participation in the U.S. electoral system. A series of interdisciplinary lectures and core readings, supplemented by consideration in discussion sections of various facets of the forthcoming elections. This course is the same as Political Science/118.

119A—B—C • Sociology of News (4,4,4) Gold
Prerequisite: Formal work on Nexus or other public media of communication. Application of social science methodology to investigatory journalism. Study of social factors affecting the nature of news as it finally emerges in the mass media. Maximum of four units only from Sociology/119A—B—C will count toward the 36 Upper Division units for the major.

120 • The Community (4) Staff
Prerequisite: Consent of instructor. Recommended: Economics/1 and 2 or 109. Structure and dynamics of the local community. Comparative and historical analysis of rural, urban, and suburban communities and neighborhoods. Study of organizations, power structure, status groupings, communication processes, socialization, factional conflict, social control, ecology, equilibrium, and change.

121 • Environment and Society (4) Staff
Impact of social institutions on human-environment relations. Cultural conceptions of human-environment links. The present crisis and possible future. This course is the same as Environmental Studies/121.

122 • Social Stratification (4) Staff
Prerequisites: Sociology/1, 2, 42A and 42B. The nature of social classes and class relations, emphasizing contemporary studies of American society.

123 • Population (4) Billigmeier, Straits
Population composition and change; differential fertility and mortality of sociocultural groups; internal and international migration; population theory and national policies; problems in areas of population pressure.

124 • Collective Behavior (4) Shibutani
The spontaneous formation of groups in crisis-situations, with emphasis on crowd phenomena and on conflict.

126 • Urban Society (4) Molotch, Straits
The social systems of modern urban society.

127 • Sociology of Urban Planning and Design (4) Molotch
Prerequisite: Sociology/126 or consent of instructor. Survey of sociological implications of city planning and urban design processes.

128 • Inter-Ethnic Relations (4) Fisher, Billigmeier, Kashima
Patterns of racial and ethnic relations, with particular emphasis upon minorities in the United States.

129 • Sociology of International Politics (4) Staff
Domestic social factors and national foreign policy; relation of public attitudes to foreign policy and the place of public opinion in the process of foreign policy formulation; effect of the international situation on domestic structure of society.

130 • Social Change (4) Staff
Prerequisites: Sociology/1, 2, 42A and 42B. Theories of social change and of the evolution of social systems.

131 • Political Sociology (4) Staff
Social and cultural bases of the political process; the study of power and authority as reflecting the interplay of interests and values; analysis of continuities and discontinuities in the democratic political system.

132 • Public Opinion (4) Gold
Conceptual analysis of public opinion in relation to notions of democratic behavior and social change. Problems of measurement. Influence of the mass media, reference groups, and interpersonal relations. Effect upon contemporary American society.

133 • Sociology of Mass Communications (4) Gold
Organization and processes of mass communications in American society and developing nations; effects of the mass media on social consensus, conflict and innovation.

134 • Social Movements (4) Flacks
Developmental processes of movements seeking alterations in the social order; a comparative analysis of utopias, classical and contemporary liberalism, socialism, and communism.

135 • Sociology of Knowledge (4) Staff
The creation, diffusion, and social influence of knowledge; thought forms and symbols as consensus-making devices; the social role of the intellectual.

136 • The Analysis of Conversational Interaction (4) Zimmerman
Prerequisites: Upper Division standing or consent of instructor. The analysis of naturally occurrng conversations with an emphasis on understanding conversation as a form of social interaction. The course will relate the structures of conversational interaction to such issues as inter-personal power, dominance and submission, sexism, and stereotyping as well as exploring the relevance of this approach to classical sociological concerns.

136Q • Special Studies in Conversational Interaction (4) Zimmerman
Prerequisites: Sociology/136 and consent of instructor. Individual and group projects in the analysis of conversational interaction stressing the understanding of this approach through actual research.

137 • Sociology of Black Nationalism (4) Staff
Analysis of the historical and sociological sources of Black Nationalism with special emphasis on the implications of Black Nationalism for radical social change.

138 • The Sociology of Conflict (4) Shibutani
Conflict as a basic and continuous social process; relationships to social change and social organization; modes of resolving differences.

139A—B • The Sociology of Black-White Relations (4,4) Fisher
Prerequisites: Sociology/1 or equivalent; students taking 139B must have taken 139A; or consent of instructor. Sociology/139B is designed to supplement 139A. Selected problems of racism will be the focus of both theoretical **(A)** and empirical **(B)** study. This course will be an integral part of reassessment, reevaluation and change in patterns of racist super-subordination.

140A—B • Animal Social Behavior (4,4) Baldwin
Prerequisites: Must take 140A in order to take 140B. A comparative study of the social behavior and social organization of animals at all phyletic levels. During the second quarter there will be special attention focused on primates.

141 • Interpersonal Relations (4) Friedell, Schulman, Scheff
Prerequisite: Sociology/2 or Psychology/145, their equivalent, or consent of Instuctor. The social psychology of person-to-person inter-action: perceptions, norms, and sentiments that develop in face-to-face contact.

142 • Socialization (5) Baldwin
The learning of culture by children: analysis of children's games, of speech, and of child-parent interaction.

143 • Small Groups (4) Schulman
Prerequisite: Sociology/2, Psychology/1 or 101, Sociology/141 or Psychology/102; or consent of instructor. The structure and dynamics of small groups including the analysis of roles, interpersonal relations, and group characteristics; intergroup relations; field and laboratory research on small groups.

144 • The Chicano Community (4) Staff
Origins of the Mexican-American immigrant in rural Mexico; context of contact; patterns of settlement in the United States; the Mexican community; social structure and social change; acculturation and generational patterns; community leadership and change. Same as Chicano Studies/144.

145 • Advanced Topics In Socialization (4) Baldwin
Prerequisite: Sociology/142. The social development of individuals after the early childhood years. Data and theories will be presented relating to the development of the more complex social behaviors, cognitions, plans, etc. typical of socialized adults.

146AA—ZZ • Special Topics in Sociology (4) Staff
Lectures in special areas of interest in contemporary sociology. Specific course titles to be announced by the department each quarter. No more than eight units of major credit will be given, but course may be repeated an unlimited number of times.

147 • Current Issues in Social Psychology(4) Schulman
Prerequisites: Sociology/2 and 103, their equivalents, or consent of instructor. An advanced course dealing with topics selected by the lecturer. Emphasis is on areas of research in social psychology, such as the decision-making process, role analysis, and other current topics.

148A • The Analysis of Social Settings (4) Wieder, Zimmerman

Prerequisites: Sociology/1 and 2. The properties and interactive processes of social settings with emphasis on theories of the social organization of natural settings and methods for studying them.

148B • The Analysis of Social Settings (4) Weiler
Prerequisites: Sociology/1, 2, 148A, or consent of instuctor. Field methods for collecting and analyzing data on naturally occurring behavior and natural social settings; direct and indirect methods of observation. Students will actually engage in one or more field studies.

149 • Introduction to Ethnomethodology (4) Staff
The course explores the ways in which people, through their practical commonplace activities produce for themselves and for others a meaningful social world. We will look at the ways in which social settings are created by participants, at the role of conversation and descriptions in creating a sense of social structure, and at the interdependence between what we see "out there" and how we see it.

150 • Principles of Social Welfare (4) Staff
Basic concepts and methods of social work; the application of casework techniques; structure and function of public welfare agencies; social group work and community organizations. This course will not count towards the major.

153 • Selected Topics in the Sociology of Sex Roles (4) Staff
Prerequisite: Upper Division standing. The course will deal with the importance of sex roles in shaping and defining the relationships prevailing in selected social institutions, structures and situations (e.g., minority and class subcultures; expression of sexuality; the labor force; the family; the media, etc.).

154 • Marriage and the Family (4) Staff
The human family, past and present; adjustment in the contemporary American family.

155A • Women in American Society (4) Staff
Prerequisite: Upper Division standing. The roles and life styles of women in various American subcultures and the ideologies developing around them.

155B • Sociological Perspectives on Women (2-4) Staff
Prerequisites: Sociology/155A, or permission of instructor. Students will undertake specific research projects aimed at elucidating the position of women in contemporary society. Various projects would include: The status of women in various social classes, in the labor force, in social institutions, etc.

156 • Sociology of Religion (4) Staff
Religion as a social phenomenon; religious influence on the structure and dynamics of society; comparison of various approaches to the study of religion.

159 • Occupations and Professions in Modern Society (4) Staff
A sociological analysis of the character and function of various occupations and professions in contemporary society. Emphasis is placed upon current sociological theory and research in this area of sociological inquiry.

160 • Industrial Sociology (4) Staff
Management and worker organizations, formal and informal. Accommodation among these organizations, and interaction between them and the community.

162 • Sociology of the Arts (4) Staff
Art forms as media of communication and symbolic interaction; the influence of social structure and social change on the work of artists; the impact of art on social life.

163 • Comparative Social Institutions: Leisure (4) Staff
Social function of leisure, its dependences on social system. Formation of leisure and institutions of leisure in East and West Europe and U.S.A. Leisure as indicator of others' properties of society. Research in leisure.

164 • Sociology of Education (4) Patterson
Changing character of education in complex societies, its relation to political, economic and technological institutions, and its effect on individual and community behavior and development.

165 • The Sociology of Medicine (4) Scheff
Survey of theory and research concerns: social factors determining health and illness, practitioner-patient relationships, and the organization of medical care.

166 • Sociology of the Future (4) Huber
The study of the effects of the rapid change of technology on social structure.

167 • Complex Organizations (4) Staff
Prerequisites: Sociology/1, 2, 42A and 42B. Institutional analysis of administrative structures and voluntary associations: informal organization, ideology, bureaucracy, decision-making, and morale.

168 • Science and Humanism (4) Baldwin
Modern man is highly dependent on science. How does science shape our society, our values, our behaviors, our survival? Are the influences humane? We will investigate modern trends in humanistic and scientific values and how these values affect our lives.

169 • The Sociology of the School (4) Weiler
Prerequisites: Sociology/2, or permission of the instructor. This course focuses on the organization of person to person interaction within the school.

169Q • Special Studies in the Sociology of the School (4) Weiler
Prerequisites: Sociology/169 or consent of instructor. Individual and group projects in direct observation of a variety of interactional settings within schools.

170 • Sociology of Deviant Behavior (4) Scheff
Prerequisites: Sociology/1, 2, 42A and 42B. Introduction to the sociological study of conformity and deviance, with emphasis on processes of social control.

171 • Sociology of Mental Illness (4) Huber, Scheff
Prerequisite: Sociology/170. Recommended: Behavior Pathology (Psychology/125). Sociological analysis of mental disorder: the cultural context of health and illness, social processes in the definition, recognition and treatment of mental illness.

172 • Sociology of Crime and Delinquency (4) Cressey
Theories of the genesis of delinquency and crime; factors in the organization of delinquent and criminal behavior from the points of view of the person and group; delinquent and criminal behavior systems.

173 • Sociology of Law (4) Staff
Study of the social and cultural factors underlying the development, maintenance and change of legal structures and processes, and analysis of theories of jurisprudence.

174 • Criminal Justice and the Community (4) Staff
Prerequisite: Sociology/1. Sociological analysis of law-enforcement systems and court systems; police discretion, differential implementation of the criminal law; negotiation in criminal justice decisions.

175 • Sociology of Punishments and Corrections (4) Cressey, Weider
Theories of punishment and treatment used in dealing with convicts and juvenile delinquents; analysis of the systems of behavior modification used by probation, prison and parole workers.

180A—B • Critical Perspectives on Industrial Society (4,4) Appelbaum
A • From Social Philosophy to Marx
The foundations of critical theory, its relationship to early social science, and to social changes in the 19th century. Thorough examination of dialectics as the basis for both structural and critical analysis.
B • Post-Marxian Critical and Structural Theory.
Prerequisite: 180A. The central focus will be on theoretical issues in contemporary society, for example: the problem of ideology; the problem of rationality; the role of science and technology in contemporary ideology and social development.

185 • Development of Sociological Thought (4) Zimmerman, Appelbaum
Prerequisites: Sociology/1, 2, 42A—B. The outstanding European and American figures and idea systems in the development of sociological thought.

190A—B • Workshop in Organizational Studies (4) Staff
Prerequisite: Consent of instructor. Both the methods of study and key theoretical issues in organizational studies will be focused upon. Students will engage in first-hand observation of some organization and write a paper based on their experience.

191A • Field Projects in Community Development and Social Service (1-4) Staff
Prerequisites: Sociology/1 and permission of instructor. The problems, dilemmas and potentialities of service institutions (both established and alternative), the "helping professions" and voluntary organizations, are explored through direct participation and observation in specific community settings. May be taken only P/NP. Maximum of four units applicable to major. Maximum of six units applicable to degree requirements.

191B • Seminar in Community Development and Social Service (4) Flacks
Prerequisites: Sociology/191A; permission of instructor. Systematic exploration of the problems of institutional and community development, of the dilemmas of social service institutions and helping occupations, of the potentialities and constraints on the creation of social and cultural alternatives. Open only to students with concrete field work experiences.

192 • Projects in Computer Science (4) Staff
Prerequisite: Consent of instructor. Projects in Computer Science for advanced undergraduate students. May be repeated for credit with consent of instructor but with the limit of 12 units for the three courses, total Mathematics/192, EE/CS 192 and Sociology/192 combined. Course the same as EE/CS 192 and Mathematics 192.

193 • Senior Seminar (4) Staff
Prerequisites: Permission of instructor. Open only to Sociology majors who have completed 20 or more units of Upper Division course work in the major. A seminar intended to represent a culminating experience for majors. The focus will be on a topic or theme that permits intensive analysis of methods and problems of social inquiry. Topics will vary with the instructor.

194 • Group Studies for Advanced Students (2-5) Staff
Intensive study and research. This course may be taken for no more than three quarters and for a maximum of five units each quarter. Enrollment normally limited to 12 or fewer students.

195A—B—C • Tutorial in the Fundamentals of Sociology (4,4,4) Staff
Prerequisite: Consent of instructor. Intensive directed reading and writing assignments in basic sociology. Topics covered include socialization, interaction processes, social organization, and major social institutions.

198 • Readings in Sociology (2-4) Staff
This course may be taken for no more than three quarters and for a maximum of four units each quarter.

***199 • Independent Studies in Sociology** (1-5) Staff
199 courses are limited to no more than five units in one quarter and no more than 12 units total. The student must have 125 units of work completed.

Graduate courses

200A—B • Sociological Theory (4-4) Staff
The first quarter is devoted to an intensive analysis of the work of the major sociological thinkers of the 19th and 20th centuries, including Durkheim, Simmel, Marx, Weber, and Mead. The second quarter is concerned with major theoretical issues in current sociology.

201A—B—C • Advanced Research Methods (4,4,4) Staff
Prerequisites: Sociology/103 and 104A—B or equivalent. Sociology/201A provides advanced training in survey techniques; 201B is concerned with experimental methods; and 201C is devoted to methods for collecting and analyzing data on naturally occurring behavior.

202 • Issues in Sociological Inquiry (4) Gold
Prerequisite: Sociology/103.

203 • Theory and Method in Sociology (4) Staff
Prerequisites: Sociology/103 and 104, or consent of instructor.

204A—B • Advanced Statistics (4,4) Gold
Prerequisites: Sociology/103 and 104, or equivalent.

208 • Formal Analysis in Sociology (4) Staff
Prerequisite: Philosophy/31, or consent of instructor. Clarification of existing sociological theories by resolution into explicit form. Special attention to axiomatic method.

209 • Evaluating Action Research Programs (4) Staff
Methodological critique of sociological studies that have policy implications.

210 • Seminar in Ethno-methodology (4) Zimmerman

220A—B—C • Origins and Development of Critical Sociology (4,4,4) Staff
This three-quarter sequence would introduce graduate students to critical sociology. The first quarter would focus on Marx's early works and philosophic issues; the second would focus on Marx's political sociology and theory of the state; and the third quarter would cover political economy and neo-Marxist theory generally.

222 • Social Stratification (4) Staff

224 • Seminar in Collective Behavior (4) Shibutani

226 • Seminar in Human Ecology (4) Staff
Consideration of theory and research implicit and explicit in the concept of human ecology, with particular emphasis on population composition, social and economic organization, modes of transportation and communication, and geographic factors.

228A—B • Selected Problems in American Racism (4,4) Fisher
A • Racism in the United States as a social institution. Primary emphasis will be given to theoretical treatments of racism, and to locations within social structure wherein theoretical claims can be assessed. The relevance of theoretical claims, and analysis derived therefrom, for action and for policy imperatives will be emphasized.
B • Field explorations and research. It is expected that each student will come to the seminar with an area of interest in the study of racism formulated and will evolve a theoretical viewpoint within which to articulate this interest. The major work of the seminar will be the development and implementation of a theoretically relevant research design and a write-up which includes presentation, analysis, and criticism of results.

229 • Race (Ethnicity) and the Political Process: A Practicum (4) Fisher
Sociological aspects of the political process and political participation by racial (ethnic) minorities in the United States. The degree and kind of involvement in the political process, as well as the consequences of this, will be explored. Emphasis will be given to field experience and its analytic meaning.

230 • Seminar in Social Change (4) Fisher

231 • Seminar in Political Sociology (4) Gold

232 • Public Opinion and Mass Communication (4) Gold

239 • Sociology of Law (4) Staff

240 • Social Control (4) Shibutani

241 • Seminar in Interpersonal Relations (4) Scheff

242 • Seminar in Language and Social Interaction (4) Wieder, Zimmerman
Prerequisite: Sociology/136 or one course in one of the following: linguistics, psycholinguistics, anthropological linguistics. The course would cover current problems in sociolinguistics including issues in phonological, syntactic, and semantic theory as developed by linguists in order to show their relevance for sociology. Emphasis will be placed upon recent procedures developed by sociologists for studying everyday conversations. The child's acquisition of social competence will be studied within a language framework. The central idea is how the child acquires the necessary competence to engage in social interaction.

243 • Practicum in Social Psychology (4) Gold, Scheff, Shibutani

245A—B • Behavioral Sociology (4,4) Baldwin
The seminar will provide an environment for exploring issues in behavioral sociology. Through readings and dialogue, each student will be encouraged to pursue his or her own research interests by drawing on resources from the behavioral paradigm.

254 • The Family (4) Staff

255 • Sociological Perspectives on Women (4) Huber, Patterson
This course will analyze the social, cultural, and economic roots of the inequality of women. It will also examine how change in female roles and position is related to institutional change (a cause and effect).

257 • Theories of Religious Behavior (4) Staff

264 • Sociology of Education: Seminar (4) Staff
The relationship of education to the political, economic and technological institutions. The study of schools and universities as complex organizations and of teaching, both in the school and university, as a profession.

265 • Seminar in Sociology of Medicine (4) Scheff

267 • Seminar in Complex Organizations (4) Staff

270 • Deviant Behavior (4) Scheff

272 • Seminar in Criminology (4) Staff
Selected topics in the sociology of crime, delinquency, criminal justice, and corrections.

Advanced graduate study and research courses

594 • Special Topics (2-5) Staff
Special seminar on research subjects of current interest. May be repeated for credit on approval of department chairman.

595 • Group Studies (4) Staff
Critical review of research in selected fields. May be repeated for credit on approval of department chairman.

596 • Directed Reading and Research (2-5) Staff
Individual tutorial. Plan of study must be approved by department chairman. May be repeated for credit on approval of department chairman. No more than half the graduate units required for the M.A. may be taken in Sociology/596.

597 • Individual Study for M.A. and Ph.D. Examinations (4-8) Staff
Normally taken with the student's committee chairman. Units do not count toward graduate degrees. Maximum of 24 units per examination.

599 • Ph.D. Dissertation Preparation (2-6) Staff
Normally taken with the student's committee chairman. Maximum of 12 units total.

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*See L/2 for 198/199 independent studies unit limitations

Spanish and Portuguese

Professors

Jose Luis L. Aranguren, Ph.D., Univer. of Madrid; Spanish; philosophy, sociology, ethics.

David Bary, Ph.D., Berkeley; Spanish; 20th century Spanish and Spanish-American literature.

Enrique Martinez-Lopez, Ph.D., Univer. of Madrid; Spanish; Spanish literature of the Golden Age, Brazilian colonial literature.

Winston A. Reynolds, Ph.D., USC; Spanish; 16th and 17th century literature, Spain Golden Age, Mexico (colonial).

[3]*Jorge de Sena,* Ph.D., Univer of Sao Paulo; Portuguese and comparative literature; Portuguese and Brazilian literature and comparative literature.

Arturo Serrano-Plaja, Licenciado en Letras, Univer. of Madrid; Spanish; Golden Age literature and contemporary Spanish literature.

Eda Ramelli, Doctora en Letras, National Univer. Mexico;*(Emeritus).*

Associate Professors

Pablo Avila, Ph.D., Stanford; Spanish; Mexican literature and folklore, linguistics, (Credential Adviser).

[4]*Carlos Garcia Barron,* Ph.D., UCLA; Spanish; 18th and 19th centuries Spanish literature.

[2,3]*Victor F. Fuentes,* Ph.D., New York University; Spanish; 20th century Spanish literature and contemporary Spanish American Drama.

Mireya Jaimes-Freyre, Ph.D., Columbia; Spanish; Spanish-American literature: Modernism, Black and social poetry.

Assistant Professors

Carlos H. Albarracin-Sarmiento, P. L., Univer. de La Plata; Spanish; Spanish-American literature.

Marta Gallo, P. L., Univer. de Buenos Aires; Spanish; Spanish-American literature; linguistics.

Harvey L. Sharrer, Ph.D., UCLA; Spanish, Portuguese; medieval Hispanic language and literature, Arthurian literature.

Roberto de Souza, P.L., Univer. de La Plata; Spanish; Spanish linguistics and philology.

Frederick G. Williams, Ph.D., Wisconsin; Spanish & Portuguese. Portuguese literature and Hispanic-American literature.

Lecturers

Nelida Lopez, B.A., Instituto Superior del Profesorado, Buenos Aires; Spanish; language teaching methodology, applied linguistics.

Fernando Martinho, Licenciado em Letras, Univer. of Lisbon; Portuguese; Portuguese Literature.

Robert E. Wilson, M.A., Arizona; Spanish (Supervisor of Teaching Assistants).

Concerns of the department

The Department of Spanish and Portuguese offers undergraduates an opportunity to master the four fundamental skills — speaking, understanding, reading and writing — of the Spanish and Portuguese languages, and to study, through the medium of the languages, the literary, cultural and linguistic heritages of the Spanish and Portuguese-speaking peoples. It offers the B.A. degree in Spanish and in Portuguese.

M.A. candidates may specialize 1) in Language and Culture; 2) in Spanish and Spanish American Literature; 3) in Hispanic Linguistics or Studies in Bilingualism and 4) in Hispanic and Luso-Brazilian Studies. The Ph.D. program prepares students for research and university teaching in Hispanic Literature or Hispanic Linguistics.

Bachelor of Arts — Spanish

Preparation for the major

Lower Division requirements: Spanish/6, 25 and History/108A—B (which fulfills the State requirement in American History and Institutions). Students who have already met the American History and Institutions requirement may substitute for History/108A—B, a two-quarter sequence chosen from among History/101A—B—Q, 150A—B, 151A—B—C, 152L—M—N, 156A—B or 158A—B, or one quarter of History/108A—B followed by one quarter from the listed courses.

Students who wish to make Spanish their major subject must have maintained an average grade of at least C in the Spanish courses taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Those planning to pursue graduate work in Spanish with emphasis on linguistics and philology are advised to take a minimum of two quarters of college Latin or its equivalent.

Native speakers of Spanish will not be permitted to enroll in any Spanish courses lower than 25. The Department defines "native speakers" as persons who took their primary and secondary schooling in a Spanish-speaking country. Because of the highly sequential nature of Lower Division language courses 1-6, students who have received in one of these courses a grade lower than "C", are urged not to continue to the next higher course. Instead they should repeat the course for no credit or provide themselves with a tutor to prepare them for the next course.

Upper Division major

All Upper Division and graduate courses (with a few specific exceptions) are given in Spanish. Spanish/25 or equivalent is prerequisite to all Upper Division courses given in Spanish.

Required: 40 Upper Division units, of which eight units may be in Luso-Brazilian literature, and 16 must be in 100 • Introduction to Hispanic Linguistics, 110A—B • Survey of Spanish Literature, and 111A • Survey of Spanish American Literature. Spanish/100 or the equivalent is prerequisite for all departmental courses in Linguistics. Spanish/110A—B—C or the equivalent is prerequisite to courses in Spanish Literature given in Spanish. Spanish 111A—B or the equivalent is prerequisite to courses in Spanish American Literature given in Spanish.

Students are advised to seek a broad, rather than specialized, preparation in which the areas of language, linguistics, Peninsular and

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[1] Absent on Leave, Fall 1975
[2] Absent on leave, Winter, 1976
[3] Absent on leave, Spring, 1976
[4] Absent on leave, 1975-76

Spanish-American culture and literatures have a balanced representation.

Students planning to do graduate work in this Department will need Spanish/110C, 111B and 124A, and are advised to take Spanish/122A—B and either 131A—B, 134A—B or 137A—B.

Candidates for the General Credential with a major in Spanish must complete 102A—B • Advanced Grammar and Composition and 103 • Spanish Pronunciation in addition to Spanish 100, 110A—B and 111A.

Bachelor of Arts — Portuguese

Preparation for the major

Required: Portuguese/1, 2, 3, 101A—B—C, or equivalent to be tested by examination (101C may be omitted if 101B has been passed with a grade of A). History/4A—B—C, 108A—B and Portuguese/8A—B are strongly recommended.

Students who wish to make Portuguese their major subject must have maintained at least an average grade of C in the college courses in Portuguese taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Upper Division major

Required: 40 Upper Division units beyond Portuguese/101A—B—C are required, including 105A—B—C and 106A—B—C. The remaining units should be divided among other Portuguese courses in the 100 series. 114 and 115 may (for the time being) be accepted toward the unit requirement, with the stipulation that readings for the major student be in the Portuguese language.

Majors may substitute eight Upper Division units in Spanish literature, Comparative Literature/110A—B, Portuguese and Brazilian history, or, with the approval of the Department, other courses that deal with Portuguese or Brazilian culture.

Master of Arts — Spanish

In addition to fulfilling the general requirements for admission to graduate status, the department requires an undergraduate major in Spanish or its equivalent. Before admission to the M.A. program in Spanish, all applicants are required to take the Advanced Test in Spanish of the Graduate Record Examination. Test applications may be obtained from the Educational Testing Service, Box 966, Princeton, New Jersey 08540, or from the Graduate Division, University of California, Santa Barbara, California 93106.

Candidates who are deficient in preparation will take the necessary undergraduate courses to make up the deficiency before beginning work in the M.A. program. At the end of the first year of study candidates' work will be evaluated. Those who are not making satisfactory progress toward the degree may be advised to drop out of the program.

Candidates for the M.A. in Spanish will follow one of the four programs described below. The M.A. degree is awarded according to *Plan II — Comprehensive Examination* in Programs 1, 2 and 4, and according to *Plan I — Thesis* in Program 3.

Program 1 — Language and Culture — *Plan II Comprehensive Examination*

This program is designed for students who wish to learn more about Spanish and Spanish American literature, linguistics, or another aspect of Hispanic culture, but who do not plan to continue to the Ph.D. It is intended to be sufficiently flexible to serve the needs not only of prospective teachers, but also of students contemplating entry into foreign trade, diplomacy, journalism, law, medicine, social work, or any other area whose study could be usefully combined with that of Spanish language and culture.

Each student will have an individual course program designed in consultation with the program director and approved by the Graduate Committee. Its structure will be determined in part by the nature of the student's study topic in course Spanish 596 (see below).

A minimum of 42 units is required, at least 18 of which must be in the graduate series.

The student's program may, with the prior approval of the program director and the Graduate Committee, include up to 12 Upper Division or graduate units from pertinent courses in Portuguese or in other departments.

The 18 graduate units will include six to nine units of course Spanish 596 (or equivalent) to be taken during the last two or three quarters of study. In this course the student carries out, *in Spanish*, a study project (approved in advance by the program director and the Graduate Committee), the results of which are presented both in a written paper and an oral presentation before a department committee. The topic of study may be any aspect of Hispanic literature or linguistics, or of Hispanic culture and civilization (including such fields as science, philosophy, pedagogy, history, political science, sociology, art, and law). Fulfillment of this requirement may involve off-campus field work, e.g., at the Mexico City Study Center, or elsewhere, as the topic demands.

Each student in Program 1 must demonstrate adequate preparation in speaking and writing standard international Spanish. A diagnostic examination of the student's oral and written Spanish will be given during the first quarter of graduate study. Students found to have significant weaknesses in either speaking or writing will be required to undertake a remedial program designed by the program director or representative and to pass a second language examination no later than the end of the first year of study. Students who have not passed this examination, if it is required, will not be permitted to begin work on their study projects. The written and oral reports on the study project itself will be judged not only on content but also on accuracy and fluency of oral and written expression.

At the time of the oral report on the study project, the student must pass an oral examination based on a reading list especially designed by the Director of M.A. Program 1.

Program 2 — Literature — *Plan II Comprehensive Examination*

This program is designed primarily for students planning to go on to a Ph.D. in the field of Spanish and Spanish-American literature.

The student must complete a minimum of 36 units of graduate and Upper Division courses, of which at least 24 must be in the graduate series. Spanish/121A—B or 122A—B, 124A—B, 212A, and at least one two-quarter research seminar in literature (which will not substitute as a Ph.D. requirement) are required.

Up to eight units of Upper Division or graduate work in Luso-Brazilian literature may count toward the degree.

A reading knowledge of a pertinent language, other than Spanish or Portuguese, is required.

The student will prepare an academic program in consultation with the program director, who will guide and advise the student until prepared to take the comprehensive examinations. The latter consist of six hours of written examinations based on a departmental reading list and covering all areas of Peninsular and Spanish-American literatures. There is, in addition, an oral examination of approximately one hours duration.

In order to be accepted to the doctoral program, the student must pass the comprehensive examinations with honors and receive the approval of the Graduate Committee.

Program 3 — Linguistics or Studies in Bilingualism — *Plan I Thesis*

This program is intended primarily for students planning to go on to a Ph.D. with emphasis in either Hispanic Linguistics (diachronic or synchronic), or Spanish-English bilingual problems.

Hispanic Linguistics is designed to give the student an in-depth knowledge of descriptive linguistics as applied to Spanish on the phonic, morophosyntactic and lexical levels; history of the Spanish language; specific semantic problems as applied to Spanish; analysis of different levels of language in both written and spoken Spanish; etc. Its particular purpose is to give the students the skills for significant research in these areas.

Studies in Spanish-English bilingualism focuses on the study of the Spanish language in the U.S.A., the bilingual situation of its speakers, and Spanish-English linguistic inter-action, mainly through contrastive, sociolinguistic, geographical and historical approaches. It is intended for prospective instructors and evaluators of bilingual educational programs, Spanish majors wishing to pursue research in Spanish dialectology in the U.S.A., Spanish speaking social scientists, guidance personnel, and professional and social workers wishing to apply bilingual studies to their areas of interest.

Completion of Spanish/100 (or equivalent) is a prerequisite to entrance into the program. In addition, 107 (or equivalent) is a prerequisite for students interested in the program with emphasis in Spanish-English Bilingualism.

Each student will have an individual course program that will be designed in consultation with the program director and approved by the Graduate Committee. Depending upon individual needs, a student's program may, with the prior approval of the program director and the Graduate Committee, include varying numbers of courses in Hispanic literature, in Portuguese, or in other departments.

The candidate is expected to complete a minimum of 34 units, at least 18 of which must be in the graduate series. As part of these units, the student will complete at least one two-quarter research seminar in Hispanic linguistics. Of the 34 units of course work, at least 24 must be taken within the Department, including no less than 7 Upper Division or graduate units in one area of Hispanic literature. In addition to course work, the candidate will study a topic related to the special program and complete a thesis.

A reading knowledge of a pertinent foreign language other than Spanish and Portuguese or competence in the use of special research methods (e.g., computers or statistics) is required.

Program 4 — Hispanic and Luso-Brazilian Studies — *Plan II Comprehensive Examination*

This program is designed primarily for students who wish to acquire a broad background in Hispanic and Luso-Brazilian studies, including those contemplating subsequent work toward a doctoral degree.

The course Portuguese/101A—B—C or Portuguese/11 is prerequisite to entrance into the program.

A minimum of 40 units is required, at least 24 of which must be in the graduate series. Spanish/121A—B or Portuguese/121A—B and a reading knowledge of pertinent foreign language other than Spanish and Portuguese are required.

Each student will have an individual course program designed in consultation with the program director and approved by the Graduate Committee. Its structure will be determined in large part by the nature of the student's interests and long-range goals. However, the student is expected to acquire a knowledge of the principal works in Hispanic, Portuguese and Brazilian literatures. The comprehensive examination is based in part on departmental reading lists of important texts in the literatures concerned. It consists of two written tests, each followed by a one-hour oral examination.

Doctor of Philosophy — Hispanic Languages and Literatures

In addition to fulfilling the general requirements for admission to graduate status, the applicant must satisfy the following departmental requirements:

The student contemplating a doctorate in Hispanic Languages and Literatures will normally follow a course of study leading to the M.A. degree under Programs 2 or 3 (see above) or 4. Each M.A. examining committee will make a recommendation to the Graduate Committee regarding the advisability of the student's continuing work toward the Ph.D.

Students entering the program from other universities are required to take the Advanced Test in Spanish of the Graduate Record Examination. (For more information, see above requirements for the M.A.) Such students must begin making up any course deficiencies during their first quarter of residence. At the end of one or two quarters, their work will be evaluated by the Department, and they may, if necessary, be tested by examination; only those who receive a favorable report will be permitted to continue working toward admittance to candidacy.

Required for the Ph.D. are the following or equivalent courses: Spanish/121A—B or Portuguese/121A—B, one quarter of 212, and at least one quarter of either 213 or 214. Each student also must take, during the two first years as doctoral candidate in the Department, a minimum of two two-quarter research seminars (at least one each year) and two one-quarter graduate studies courses (at least one each year). This course work should preferably be related to the student's areas of specialization.

The student will also complete three graduate courses (minimum of 9 units) in a minor field with a grade of A or B prior to the qualifying examination. It is expected that most students will minor in another literature (the possibilities include Portuguese or Brazilian literature, Comparative Literature, Latin or even in an appropriate Social Science), but an individual with a strong interest and adequate background in another of the humanities, or even in an appropriate science, may minor in one of those fields. In any case, the courses in the minor must bear a demonstrable relation to the student's special interests within the major field of Hispanic literature or linguistics and must be approved by the Department.

Before being admitted to candidacy for the doctorate, the student must demonstrate a good reading knowledge of two foreign languages besides Spanish and Portuguese. The choice of languages will depend largely upon the student's individual needs. A general command of Spanish or Portuguese and a reading knowledge of

Portuguese or Spanish will be assumed, but not formally tested.

By the end of the first or second quarter in the Ph.D. program each student will select two areas of specialization (see below), a field of maximum interest (see below), a projected dissertation topic, and a minor. These decisions shall be made in consultation with the Graduate Adviser and approved by the Graduate Committee. The Graduate Committee will then assign the student an advisory committee to assist in preparing for the qualifying examinations.

The qualifying examinations, which must be passed before advancement to candidacy, will test the student's knowledge in the field of maximum interest and in two areas selected by the student from among the following: 1) Medieval Philology and Literature, 2) Literature of the 16th and 17th centuries, 3) Literature of the 18th and 19th centuries, 4) 20th-century literature, 5) Hispanic linguistics. Students whose primary interest is in the Spanish and Spanish American field will be expected to demonstrate familiarity with Portuguese and Brazilian readings in the area corresponding to their field of primary interest, based on a department list, or to take certain equivalent courses in Luso-Brazilian literature. A similar requirement in Spanish and Spanish American topics applies to students whose area of primary interest is in the Luso-Brazilian field. Further information regarding examination procedures may be obtained from the Department.

The field of maximum interest will normally be within the student's two areas of specialization and related to the projected dissertation topic. It may include an individual list of Portuguese and Brazilian or Spanish and Spanish American readings prepared by the student's doctoral committee.

Upon passing the qualifying examinations the student is advanced to candidacy. The student will thereupon formally select a dissertation topic, in consultation with the doctoral committee. Upon approval of the topic and research plan by the doctoral committee, a dissertation committee will be appointed, under whose direction the candidate will write a dissertation; upon its successful completion, the degree will be awarded.

Career Opportunities

The Spanish and Portuguese majors provide preparation leading to careers as teachers or scholars and should also be of relevance to persons interested in many other careers in which the knowledge of languages and cultures is useful, as in Foreign Service, foreign trade, journalism, travel service, health services and work with international organizations.

Teaching Credentials

Students who complete a major in Spanish may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

All candidates for a teaching credential in Spanish at the secondary level must complete Spanish 100, 102A—B (Advanced Grammar and Composition), 103 (Spanish Pronunciation), 110A—B, 111A. Recommended courses are Spanish 119A—B (Spanish Institutions and Culture), (Contemporary Spanish Culture), and 177A—B (Spanish American Culture), or 178 (Mexican Culture). Students are directed to confer with designated counselors in the Department of Spanish and Portuguese concerning these requirements.

Successful completion of an advanced degree in Spanish is required for issuance of the Community College Instructors Credential. Students interested in the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Correspondence information

Department of Spanish and Portuguese, Phelps Hall, Rm. 4206, University of California, Santa Barbara, California 93106. Phone: (805) 961-3161.

Courses taught in English

The following courses require no knowledge of a foreign language and are open to all students, without prerequisites.

Portuguese

Lower Division course in English

50FS • Freshman Seminar (3) Staff
Selected cultural, literary or linguistic topics of the Luso-Brazilian world.

Upper Division courses in English

* **114 • Literature of the Portuguese Expansion** (4) Sena
Literary masterpieces of Portuguese Golden Age (15th, 16th and part of 17th centuries): chronicles of the discoveries, the epic poem *Os Lusiadas* by Camoes, dramatic narratives of shipwrecks — all translated into English. Course intended to serve as an introduction to a culture relevant to U.S. development, particularly California. Acceptable in satisfaction of the foreign literature requirement.

* **115 • Brazilian Literature in English Translation** (4) Williams
Readings in English of significant writers and poets of 19th and 20th century Brazil: Almeida, Machado de Assis, Lins do Rego, de Andrade, Meireles, Guimaraes Rosa, Suassuna and others. Acceptable in satisfaction of the foreign literature requirement.

125A—B • Culture and Civilization of Portugal and Brazil (4,4) Staff
The distinctive features of Portugal and Brazil as manifested in their institutions, art, music and literature.

Spanish

Lower Division course in English

50FS • (3) Freshman Seminar
Selected cultural, literary or linguistic topics of the Hispanic world.

Upper Division courses in English

* † **115A—B • Masterpieces of Spanish Literature** (4,4) Bary
Readings in English translation and discussion of representative works from the Middle Ages to the end of the sixteenth century, and from the seventeenth century to the end of the nineteenth.

* **116 • Juan Ruiz: The Book of Good Love** (4) Sharrer
Reading and interpretation of the 14th-century Spanish masterpiece in English translation. A study of *The Book of Good Love* in the context of other great works of the period, such as the *Decameron* and the *Canterbury Tales*.

* † **120A—B • Spanish American Literature in English Translation** (4,4) Staff
Outstanding 20th century authors of Spanish America.
A • Spanish American Literature.
B • Mexican Literature.

* **142 • *Don Quijote* in English Translation** (4) Bary
Reading and discussion, both in English, of Cervantes' novel in the context of Hispanic culture and of world literature.

* † **180 • Mexican Civilization** (4) Staff
Social, institutional, intellectual and artistic trends in the development of Mexico. Intended for non-majors. May not be taken for credit by students who have already taken Spanish/178, Mexican Culture.

* † **181 • Social Poetry of Spain and Spanish America in English Translation** (4) Jaimes-Freyre
Poets such as Cesar Vallejo, Pablo Neruda, Nicanor Parra and others.

* † **188 • (4) Spanish American Black Poetry in English Translation** (4) Jaimes-Freyre

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*May be used to satisfy foreign literature requirement
†Not credited toward major or minor.

Black poetry in the Caribbean and in Brazil; Nicolas Guillen, Emilio Ballagas and others.

Other departmental offerings accepted toward major:

AEP 191L • Bibliography I (2) Library Staff

Portuguese

Lower Division courses

1 • Elementary Portuguese (4) Staff
Beginning course in elementary Portuguese.

2 • Elementary Portuguese (4) Staff
Prerequisite: Portuguese/1 or equivalent. Continues activities commenced with Portuguese/1.

3 • Elementary Portuguese (4) Staff
Prerequisite: Portuguese/2 or equivalent. Completes the basic study of the elements of the language.

8A—B • Portuguese Conversation (2,2) Staff
Prerequisite: Portuguese/3 or equivalent or the consent of the instructor. Informal conversation hour. Courses conducted entirely in Portuguese.

10 • Beginning Intensive Language (Summer Session Only) (12) Staff
Designed for high school students and university undergraduates who desire to accelerate and complete a year of language work in a summer session and for graduate students wishing to fulfill the graduate language requirement with Portuguese as one of the languages in which they are competent to read works in their major field. Prepares students to continue with second year Portuguese successfully.

11 • Portuguese for Graduate Students (5) Staff
Designed primarily for graduate students who already possess a knowledge of another Romance language and who wish to acquire a reading knowledge of Portuguese.

12 • Portuguese Bilingual Education (Summer Session Only) (2) Staff
(2 week course)
Current philosophies, problems, approaches, materials and instructional aids used in Portuguese-English bilingual-bicultural elementary and secondary programs in a number of California school districts.

Upper Division courses

101A—B—C • Reading, Grammar and Composition (4,4,4) Staff
Prerequisite: Portuguese/3 or equivalent. Analysis of selected literary texts and development of skills in writing Portuguese.

102A—B • Advanced Grammar and Composition (4,4) Staff
Prerequisite: Portuguese/101B or consent of instructor. Study of the finer points of Portuguese grammar and syntax. Equal stress is placed on written and oral practice of the language. The work in class will consist of careful study of essays and articles.

105A—B—C • Survey of Portuguese Literature (4,4,4) Martinho
Prerequisite: Portuguese/101A—B—C or consent of instructor.
A • Portuguese literature from its origins to the 16th century.
B • Portuguese literature of the 16th, 17th and 18th centuries.
C • Portuguese literature of the 19th and 20th centuries.

106A—B—C • Survey of Brazilian Literature (4,4,4) Sena, Williams
A • Brazilian literature of the colonial period.
B • Brazilian literature from the 19th century to 1922.
C • Brazilian literature from 1922 to present.

121A—B • History of the Portuguese Language (In English) (4,4) Sharrer
Prerequisite: Spanish/100 or equivalent. An introductory study of the evolution of the Portuguese language from its origins to modern times. Lectures in English.

132A—B • Luis de Camoes (4,4) Sena
A study of Camoes' lyric poetry and epic poem, *Os Lusiadas*.

185 • Brazilian Novel of the 20th Century (4) Sena, Williams
A study of the Brazilian novel from Machado de Assis to the present, including authors such as Lima Barreto, Erico Verissimo, Guimaraes Rosa, Lins do Rego, Graciliano Ramos, J. Amado, Lispector, Antonio Gallado, etc.

189 • Brazilian Modernism (4) Sena, Williams
An introduction to the poetry and prose fiction of the Brazilian avant-garde of the 1920's and 30's.

* **199 • Independent Studies in Portuguese** (1-5) Staff
Independent studies with one of the Departmental instructors in Portuguese, to permit study of subject desired by student not covered in course offerings.

*See L2 for 198/199 independent studies unit limitations.

Graduate courses

* **232 • Studies on Camoes** (3) Sena
Camoes' works in their historical and cultural contexts.

* **240 • Studies in Portuguese Mannerist and Baroque Literature** (3) Staff
Portuguese poetry and prose of the 16th and 17th centuries.

* **245 • Studies in Brazilian Colonial Literature** (3) Staff
Selected authors and topics in Brazilian literature of the 16th, 17th and 18th centuries.

***250 • Studies of Eca de Querioz and the Portuguese Realistic Novel** (3) Staff
Eca de Queiroz's work, his conception of Realism, his influence on Spanish, Spanish-American and Brazilian literature, his most important followers.

* **255 • Studies on Machado de Assis and the Brazilian Novel** (3) Staff
Machado de Assis' novelistic work; its innovative approach as a basis of modern fiction. Other novelists of his time will be studied also.

* **260 • Studies in Brazilian Post-Independence Literature** (3) Staff
Selected authors and literary movements of 19th and 20th centuries.

* **265 • Studies on Fernando Pessoa and the *avant-garde*** (3) Sena
Pessoa's poetry, its influence on contemporary Portuguese poetry, and its relationship to the world *avant-garde* movement.

* **270 • Studies in Portuguese African Literature** (3) Staff
Modern authors from Cabo Verde, Angola, and Mozambique will be studied.

*NOTE: The content of these courses will vary from quarter to quarter, and they may be repeated for credit with the consent of the Departmental graduate adviser.

594A-594ZZ • Special Topics (1-4) Staff
Special Seminar on research subjects of current interest. S/U or letter grade.

596A-596ZZZ • Directed Reading and Research (2-18) Staff
Individual tutorial, instructor usually student's major professor. Written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade or In Progress.

597A-597ZZ • Individual Study for M.A. Comprehensive or Ph.D. Exams (2-12) Staff
Individual study under instructor who is member of the student's program committee. S/U grade only.

Spanish

Lower Division courses

1 • Elementary Spanish (4) Staff
Beginning course in elementary Spanish.

2 • Elementary Spanish (4) Staff
Prerequisite: Spanish/1 or equivalent. Continues activities commenced with Spanish/1.

3 • Elementary Spanish (4) Staff
Prerequisite: Spanish/2 or equivalent. Completes the basic study of the elements of the language.

4 • Intermediate Spanish (4) Staff
Prerequisite: Spanish/3 or equivalent. Begins review of basic grammar and syntax.

5 • Intermediate Spanish (4) Staff
Prerequisite: Spanish/4 or equivalent. Continues the review of basic grammar and syntax.; Course conducted in Spanish.

6 • Intermediate Spanish (4) Staff
Prerequisite: Spanish/5 or equivalent. Extensive reading, writing and speaking Spanish. Conducted only in Spanish.

8A—B—C • Spanish Conversation (2,2,2) Staff
Conversational practice through which student learns idioms, conversational courtesies of the language, etc. and improves facility in speaking and understnading the spoken language. Passed/Not Passed grading only.
8A *Prerequisite: Spanish/3 or equivalent*
8B *Prerequisite: Spanish/4 or equivalent*
8C *Prerequisite: Spanish/5 or equivalent*

9A—B—C—D • Spanish Conversation: Professional Subjects (2,2,2,2) Staff
Prerequisite: Spanish/6 or equivalent. Passed/Not Passed grading only.
Directed conversation concentrating on these professional areas:
9A • Foreign Service
9B • Health work
9C • Legal and Social work
9D • Commerce

14 • Individualized Basic Spanish (1-24) Wilson
Course consists of 24 sequential instructional units equivalent to Spanish/1, 2, 3, 4, 5, 6. Successful completion of each unit earns the student one unit of credit and permits him to continue, if he so wishes, to the following unit. Each student progresses at his own rate of speed. At the end of each quarter, units of credit and grades are calculated on the basis of instructional units completed during that quarter.

25 • Advanced Spanish (5) Staff
Prerequisite: Spanish/6 or equivalent. Course is designed to reinforce students' comprehension and ability to express themselves in Spanish, both orally and in writing, and to develop the students' vocabulary and awareness of syntactical structures in the language.

Upper Division courses

Spanish/25 or equivalent is prerequisite to all Upper Division courses given in Spanish.

100 • Introduction to Hispanic Linguistics (4) Gallo
Prerequisite to all other Upper Division courses in Hispanic linguistics. Introduction to linguistic theories, methods and problems as applied to Spanish. Given in Spanish with Spanish examples.

101 • American Spanish (4) Gallo
Prerequisite: Spanish/100. Geographical, social and stylistic distribution of phonemic, morphosyntatic and lexical features in American Spanish, with special reference to the Spanish spoken in the U.S.

102A—B • Advanced Grammar and Composition (4,4) Lopez
Required for Teaching Credential candidates with major in Spanish. The study of the finer points of Spanish grammar and syntax. Equal stress is placed on written and oral practice of the language.

102C • Advanced Spanish for Communication: An Intensive Approach (4) Lopez
Prerequisite: Spanish/25 or consent of the instructor. For the advanced student or teacher of Spanish. Special attention to problems of language interference for bilingual persons; translation exercises, vocabulary expansion, idiomatic constructions. *(Summer Session Only)*

103 • Spanish Pronunciation (2) Avila
Prerequisite: Consent of instrucor. Required for Teaching Credential candidates. The course is concerned with the following: organs of respiration and articulation; vowels and consonants; intonation and pronunciation.

105 • Advanced Translation (4) Lopez
Prerequisite: Spanish/102A—B or consent of the instructor. Oral and written translations to and from target language, allowing students to translate and interpret texts from different fields with accuracy and corrections as regards grammar, syntax, vocabulary and style. Theoretical points will be explained within contexts studied.

106 • Cultures in Contact (4) Aranguren, Gallo
Prerequisite: Spanish/100 or consent of instructor. Patterns of cultural contacts in the U.S. between Anglos and Spanish-speaking communities (Cubans, Mexican-Americans and Puerto Ricans). Description of different acculturation situations with special reference to such problems as cultural identity and language loyalty and their relationship to social competence and integration. This course is intended to complement, from a cultural point of view, the objectives of Spanish/107.

107 • Languages in Contact (4)
Prerequisite: Spanish/100 or consent of instructor. Cultural contact and language contact. The bilingual community and the bilingual individual. Causes and mechanisms of phonic, grammatical and lexical interference. Interference of the English language in Spanish as spoken by the Mexican-American community. Bibliography and research guide.

108A—B—C • Spanish-English Contrastive Analysis (4,4,4) Lopez, Gallo
Prerequisite: Spanish/100 and 107 or consent of instructor. Introduction and critical review of approaches and factors in contrastive analysis, with direct application to phonic, morphosyntactic and lexical contrast between Spanish and English. Provides background for research in bilingualism and for teaching Spanish or English as a second language.

109 • History of the Spanish Language in the Southwest (4) Staff
Prerequisite: Spanish/100 or consent of instructor. Historical survey of the different strata of the Spanish language in the Southwest United States, from the first settlements to modern migrations. Synchronic description of Spanish as spoken in Arizona, California, Colorado, New Mexico, and Texas. Spanish onomastics in the English language.

110A—B—C • Survey of Spanish Literature (4,4,4) Staff
Prerequisite to certain literature courses as listed below. General Survey of Spanish literature.
110A • Middle Ages

110B • 16th and 17th centuries

110C • 18th through 20th centuries

111A—B • Survey of Spanish American Literature (4,4) Staff
General survey of Spanish American literature.

111A • From beginning to the 19th century
Prerequisite to certain literature courses as listed below.

111B • From Modernism to the present
Prerequisite to certain literature courses as listed below.

114A—B—C • The Spanish Language: A Linguistic Approach (4,4,4) Gallo
Prerequisite: Spanish/100. Spanish/114A is prerequisite to 114B, 114C.
A • Phonetics and Phonemics
B • Morphosyntax
C • Semantics

117 • Essayists of Spain and Spanish America (4) Aranguren, Jaimes-Freyre
Prerequisite: Spanish/110C and/or 111B (according to emphasis on Peninsular and/or American authors.) Representative essayists of Spain, from Saavedra Fajardo to Ortega y Gasset and of Spanish America, from Sarmiento and Montalvo to Alfonso Reyes and Octavio Paz.

119A—B • Spanish Institutions and Culture (4,4) Staff
Study of the development of the Spanish nation, with special focus on key social and political institutions, the arts, and major currents of thought.

121A—B • History of the Spanish Language (4,4) Staff
Prerequisite: Spanish/100. Development of the Spanish language from its origins to modern times. Successive linguistic steps in the light of historical circumstances, with sample texts. Required for the M.A. in Spanish, Program 2 and 4.

122A—B • Medieval Spanish Literature (4,4) Martinez-Lopez, Sharrer
Prerequisite: Spanish/110A. A detailed survey of the main trends in Spanish literature to 1500.

123A—B • Hispanic Balladry (4,4) Martinez-Lopez, Sharrer
Prerequisite: Spanish/110A.
A • History of the Spanish ballad, Hispanic balladry in Spanish America, the United States and among the Sephardic Jews.
B • Origin and originality of the Mexican ballads *(corridos)*; their history, themes and style.

124A—B • Textual Analysis and Literary Criticism (4,4) Staff
Techniques of analysing literary works in terms of language, forms and structure, with attention to the special problems of the Spanish language; close readings of specific Hispanic poems and short stories.

131A—B • Golden Age Poetry (4,4) Martinez-Lopez, Reynolds
Prerequisite: Spanish/110B. Lyric poetry of the 16th and 17th centuries: Garcilaso, Luis de Leon, San Juan de la Cruz, Lope, Quevedo, Gongora and others.

134 • Golden Age Novel (4) Reynolds, Serrano-Plaja
Prerequisite: Spanish/110B. The main novelistic types of the period: novel of chivalry; pastoral novel; picaresque novel and others (*Don Quijote* excluded).

137A—B • Golden Age Drama (4,4) Reynolds, Martinez-Lopez
Prerequisite: Spanish/110B. The classic *Comedia*, by Lope, Tirso, Alarcon, Calderon and other dramatists.

140A—B • Cervantes: *Don Quijote* (4,4) Serrano-Plaja
Prerequisite: Spanish/110B. Reading and discussion of the first and second parts of *Don Quijote*.

141 • Cervantes: Other Works (4) Serrano-Plaja
Prerequisite: Spanish/110B. Readings from the minor works of Cervantes: *Novelas ejemplares, Comedias, Entremeses.*

145 • Colonial Spanish American Literature (4) Albarracin, Avila, Reynolds
Prerequisite: Spanish/111A. Such writers as Garcilaso de la Vega, el Inca, Bernardo de Balbuena, Carlos de Siguenza y Gongora, Sor Juana Ines de la Cruz, Manuel M. de Navarrete.

150 • Eighteenth Century Spanish Culture (4) Barron, Bary
Prerequisite: Spanish/110C. Literature, social history, artistic and intellectual developments, all essential for a full understanding of subsequent events in both Spain and Spanish America.

161 • Spanish Romanticism (4) Barron
Prerequisite: Spanish/110C. Main trends of Spanish Romanticism — representative poets, dramatists and prose writers.

165A—B • Nineteenth Century Spanish Fiction (4,4) Barron
Prerequisite: Spanish/110C. Main novelists of 19th century Spain are studied.

170A—B • Spanish Literature from 1898 to 1936 (4,4) Bary, Fuentes
Prerequisite: Spanish/110C. Readings of such authors as Unamuno, Baroja, Azorin, Valle-Inclan, Antonio Machado, Ortega, Gomez de la Serna, Guillen, Garcia Lorca and others, analyzed in their historical and social context.

175 • Contemporary Spanish Literature (4) Aranguren, Bary, Fuentes
Prerequisite: Spanish/110C. Spanish literature since the Civil War. A study of the main trends of post-war Spanish novel, theater and poetry, in their historical and social context.

176 • Contemporary Spanish Culture (4) Aranguren, Fuentes
Prerequisite: Spanish/110C. A survey of the political, religious, social and philosophical issues in 20th century Spanish life and letters.

177A—B • Spanish-American Culture (4,4) Staff
Leading social, institutional, intellectual and artistic trends from the 16th century to the present.

178 • Mexican Culture (4) Avila
Social, institutional, intellectual and artistic trends in the development of modern Mexico.May not be taken for credit by students who have already taken Spanish/180 (Mexican Civilization) which is taught in English.

183 • Studies in Hispanic Literatures (4) Staff
Prerequisite: Consent of instructor. Studies in literary topics to be chosen for each quarter according to current interest of students and faculty. May be repeated on different topics for credit.

185A—B • Modern Spanish American Fiction (4,4) Albarracin, Gallo
Prerequisite: Spanish/111B. Contemporary trends in Spanish American fiction. History and development of Spanish American novel in the 19th and 20th centuries. Analysis and study of techniques, major figures, movements, social and historical background.

186A—B • Modern Mexican Literature (4,4) Avila
Prerequisite: Spanish/111B. Major trends in the literature of the Mexican people, including such movements as Modernist poetry, the novel of the Revolution, the *Contemporaneos*, and others.

187A—B • Modern Hispanic Drama (4,4) Fuentes
Prerequisite: Spanish/110C for 187A; Spanish/111B for 187B.
A • Representative dramatists of Spain such as Unamuno, Valle-Inclan, Garcia Lorca, Buero Vallejo, and others.
B • Representative Spanish American dramatists such as Carballido, Solorzano, Wolff, Cuzzani, Marques and others.

189 • Modern Spanish American Poetry (4) Albarracin, Bary, Fuentes
Prerequisite: Spanish/111B. Modernist and Vanguard schools: Dario, Herrera y Reissig, Huidobro, Vallejo, Neruda, Paz and others.

191A—B • The Theme of Don Juan in Spanish Literature (4,4) Serrano-Plaja
Prerequisite: Spanish/110B for 191A; Spanish/110C for 191B. The theme of Don Juan as developed by representative Spanish authors from the 16th to 20th centuries.

197 • Individual Hispanic Authors (4) Staff
Prerequisites: see departmental course guide. Intensive reading and discussion of selected Hispanic authors. May be repeated for a total of 20 units.

***199 • Independent Studies in Spanish** (1-5) Staff
Prerequisites: Upper Division status and departmental approval. Independent studies in selected subjects not covered by course offerings.

Graduate Courses

200 • Synchronic Linguistics (3) Gallo
In-depth study on particular subjects in the field of the phonological, syntactic or semantic component, or the lexicon, as applied to modern Spanish.

202 • Diachronic Linguistics (3) Gallo
The problem of linguistic change. Current trends in diachronic linguistics as applied to Spanish. In-depth study on particular subjects of History of the Spanish language, Historical Grammar, of Spanish Language or Spanish Philology.

207 • Description and Measurement of Spanish-English Bilingualism (3) Gallo
Prerequisite: Spanish/100, 107, 108A—B—C or consent of instructor. Study of the various dimensions of bilingualism. Identification and delimitation of variables; choice of effective and acceptable units, and elaboration of measurement techniques. Validation of appropriate indices. Sampling techniques; proficiency tests.

209 • Dialectology (3) Gallo
A study of Spanish as it developed and is now spoken in the various parts of Spain and Spanish America, with the distinguishing features of each. The reasons for the distinctive phenomena: morphological, phonological, syntactic, lexigraphic. Indigenous substrata and historical influences (e.g., anglicisms from the United States) in their formation. Use of texts of different periods.

212A—B • Bibliography and Methods of Research (3,3) Barron, Gallo
A • Literature
B • Linguistics

213 • Theory of Literary Criticism (3) Albarracin, Aranguren
Analysis and application of methods of literary criticism in relation to principal texts in Spanish literature, with emphasis on stylistics.

214 • History of Hispanic Literary Criticism (3) Staff
A diachronic survey of the theory of literature and literary criticism in the West, from the Middle Ages to the present, with particular attention to the Hispanic World.

218 • Individual Hispanic Authors (3,3,3,3,3,3) Staff
Intensive study of the work of an individual Hispanic author, to be chosen by the instructor. Course may be repeated for a total of 18 units (6 courses, each a different author).

222 • Studies in Medieval Peninsular Literature (3) Sharrer
Studies in the medieval literatures of Castile, Galicia, Portugal, and Catalonia. Content of course will vary from quarter to quarter, and it may be repeated for credit with the consent of the Departmental Graduate Adviser.

230A—B—C—D—E—F • Studies in Spanish Literature of 16th and 17th Centuries (3,3,3,3,3) Aranguren, Martinez-Lopez, Reynolds, Serrano-Plaja
Study courses will be taught under general title, with following divisions:

A • Poetry
B • Narrative Prose
C • Comedia
D • Auto Sacramental
E • The Mystics
F • Moralists and Satirists
Up to a total of 18 units is possible for student wanting all portions of 230.

240 • Studies on Cervantes (3) Serrano-Plaja
Selected topics studied in the light of recent scholarship on Cervantes.

245 • Studies in Spanish American Colonial Literature (3) Reynolds, Albarracin
Selected topics from the 16th, 17th and 18th centuries.

260 • Studies in Nineteenth Century Spanish Literature (3) Aranguren, Barron, Fuentes, Serrano-Plaja
Seminars covering selected authors, theses or genres from the period in question.

270 • Studies in Twentieth Century Spanish Literature (3) Serrano-Plaja, Aranguren, Bary

275 • Spanish Literature Since the Civil War (3) Aranguren, Bary, Fuentes
Spanish Literature from 1939 to the present; literature, theater, poetry, novel.

280 • Studies in 20th Century Spanish American Poetry (3) Bary, Jaimes-Freyre
Seminar in selected authors and aspects of 19th and 20th century Spanish American poetry. Modernist and Vanguard schools.

283 • *El Modernismo* (3)
The influence of Ruben Dario and his followers on the prose and poetry of Spanish America and Spain: 1888-1920.

285 • The Novel in Spanish America (3) Albarracin, Gallo
The development of the novel in Spanish America.

290 • Literature of a Single Spanish American Country (3) Staff
An intensive study of literature of a particular Spanish American country each time the course is offered. May be repeated for credit for different countries.

TA 292 • Instructional Procedures and Supervised Teaching in Spanish (3) Wilson
Prerequisite: B.A., admission to graduate school and appointment as a Teaching Assistant or student Associate in Spanish. Instruction and supervised teaching in preparation for teaching lower division Spanish courses at UCSB. Required of new Teaching Assistants and student Associates. S/U grading only.

295A—B • Research Seminar in Spanish and Spanish American Literature (3,3) Staff
Primarily intended to train students in research techniques; background material and selection of topic in first quarter; completion of research paper in second quarter, reporting regularly to class on progress of work. In Progress grading, with letter grade for both quarters to be given at the end of the second quarter.

296A—B • Research Seminar in Spanish Linguistics (3,3) Gallo, Souza
Primarily intended to train students in research techniques; background material and selection of topic in first quarter; completion of research paper in second quarter, reporting regularly to class on progress of work. In Progress grading, with letter grade for both quarters to be given at end of second quarter.

594A—ZZ • Special Topics (1-4) Staff
A special seminar on research subjects of current interest. Variable unit course. S/U or letter grade.

596A—ZZ • Directed Reading and Research (2-18) Staff
Directed reading and research. Individual tutorial. Instructor usually student's major professor. A written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. No more than half units required for M.A. may be taken in 596 series. S/U grading only.

597A—ZZ • Individual Study for M.A. Comprehensive and Ph.D. Exams (1-12) Staff
Individual study for M.A. Comprehensive and Ph.D. Exams. Instructor should be student's major professor or chairman of his doctoral committee. No unit credit allowed toward advanced degrees. Enrollment limited to 24 units per examination (maximum units in any one quarter, 12 units). S/U grading only.

598A—ZZ • Master's Thesis Research and Preparation (2-12) Staff
Prerequisite: M.A. Program 3 (Hispanic Linguistics or Studies in Bilingualism) and candidate and consent of thesis committee chairman. Only for research underlying the thesis and writing of the thesis. S/U grading only. Since student is granted 6 units credit toward the degree, no unit credit is given for the course.

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*See L-2 for 198/199 independent studies unit limitations.

599A—ZZ • Ph.D. Dissertation Research Preparation (2-12) Staff
Only for research underlying the dissertation, writing for the dissertation. Instructor should be the chairman of student's doctoral committee. S/U grading only. Maximum total 12 units.

Translation and Interpretation

Spanish 400 • Introduction to Translation, Spanish to English (4) Westman, D
Translation of selected passages from Spanish into English with emphasis on economic, political and scientific texts.

401 • Introduction to Translation, English to Spanish (4) López, N.
Translation of selected passages from English into Spanish with emphasis on economic, political and scientific texts.

410 • Introduction to Interpretation, Spanish to English (4) Staff
Consecutive and simultaneous interpretation of simple material.

411 • Introduction to Interpretation, English to Spanish (4) Staff
Consecutive and simultaneous interpretation of simple material.

420 • Advanced Translation, Spanish to English (6) Staff
Individual translation project into English.

420S • Advanced Translation, English to Spanish (6) Staff
Individual translation project into Spanish.

421 • Conference Interpreting, Spanish to English (6) Staff
Simultaneous interpretation of entire speeches into English.

421S • Conference Interpreting, English to Spanish (6) Staff
Simultaneous interpretation of entire speeches into Spanish.

Speech

Professors

Theodore D. Hanley, Ph.D., State University of Iowa; speech science.
Glen E. Mills, Ph.D., Michigan; rhetoric, argumentation.
Edwin R. Schoell, Ph.D., Denver; public address, semantics, speech education.
Upton S. Palmer, Ph.D., Michigan; speech (*Emeritus*).
John C. Snidecor, Ph.D., Iowa, speech science (*Emeritus*).

Associate Professors

Sanford E. Gerber, Ph.D., USC; audiology.
Rollin W. Quimby, Ph.D., Michigan; rhetoric.

Assistant Professors

Janis M. Costello, Ph.D., Kansas; speech pathology (stuttering, language, behavior modification).
Dean C. Garstecki, Ph.D., Illinois, Urbana-Champaign; audiology.
Robert L. Koegel, Ph.D., UCLA; autism.
Anthony J. Mulac, Ph.D., Michigan; quantitative research.
Gerry F. Philipsen, Ph.D., Northwestern; interpersonal and small group communication.
Carol A. Prutting, Ph.D., Illinois, Urbana-Champaign; speech pathology (language development).

Lecturers

Roberta A. Jackson, M.A. UCSB; speech pathology (language development).
Diane B. Gilchrist, M.A., UCSB; speech pathology (phonemics).

Research Associates

Robert E. Carrel, M.D., speech pathology.
Hugh D. Greer III, M.D., Speech pathology.
Joseph R. DiBartolomeo, M.D., audiology.
June E. Shoup-Hummel, Ph.D., Michigan; speech sciences.

Concerns of the department

Two majors are offered within the Department of Speech: speech and hearing, and communication studies. The former is related to the health sciences, while the latter is related to the humanities and social sciences. Both lead to graduate work.

The Speech and Hearing major at UCSB is the only such program among the University's nine campuses. The program is designed somewhat in tracks or specialties which are (1) speech science, (2) hearing science, and (3) clinical speech, language, and hearing pathology, including habilitation of the hearing-impaired. The emphasis within these tracks varies according to the level of study.

The central goal of the Speech and Hearing clinical program is to supply rigorously educated and highly trained personnel to serve the needs of speech and hearing handicapped persons. Students acquire relevant and significant background knowledge in biology, physics, psychology, and linguistics; then knowledge in psychoacoustics, anatomy and physiology of speech and hearing, acoustics of hearing and speech, the science and laws of human behavior, etc., and only then practicum experience in clinical speech and hearing.

Communication studies is a growing field of learning, teaching, and research. It continues to include the long-established courses such as public address, argumentation, debate, semantics, phonetics, rhetorical theory, and criticism. In recent years the addition of social-behavioral studies has resulted in courses dealing with persuasion and attitude change, information processing, group discussion and the decision-making process, conflict resolution, and cultural patterns of communication. Most recently the development of mass communication in this department is leading to the expansion of offerings in radio, television, and film. Interdisciplinary studies based in this department lead to the Ph.D. degree.

Two majors are offered within the Department of Speech: speech and hearing, and communication studies. The former is related to the health sciences, while the latter is related to the humanities and social sciences. Both lead to graduate work.

Bachelor of Arts — Speech and Hearing

Preparation for the major

Students must meet the General Education requirement as outlined in this catalog. Advising is to be done by the Speech and Hearing faculty only.

Courses required are: Speech/50 and 60, Psychology/1 or 101, Physics/11 and Zoology/25 or equivalent course in human anatomy.

Upper Division major

Speech/120, 121, 122, 123, 124, 125, 127, 151, 152, 153, 154, 166

Bachelor of Arts — Communication Studies

Preparation for the major

Students must meet the General Education requirements as outlined in this catalog. Courses listed below, whether in General Education sequence or not, are required in the Communication Studies major.

Twelve units from Speech/10, 11, and 35; 12 units from either (1) Political Science and History, or (2) Psychology, Anthropology, and Sociology. Some will apply toward General Education requirements.

Upper Division major

Required Theoretical Core—20 units from Speech 129, 136, 150, 159 and 185.

Electives—20 units, 16 of which are Upper Division, from the following: Speech 40, 47, 112, 117, 131, 132, 134, 140, 142, 149AB, 157, 180, 181, and 185.

Master of Arts

The department offers work leading to the M.A. degree in Speech and Hearing Sciences and in Communication Studies.

Normally the entering graduate student has an undergraduate major in Speech. Qualified students from related areas may, as limited students, acquire a background comparable in breadth to that of the B.A. candidates in Speech on this campus.

Requirements are specified in publications of the Graduate Division. They include at least 30 units of courses, a thesis, the Introduction to Graduate Study in Speech, and either a foreign language or a cognate field. The candidate in Communication Studies will take at least two methodological courses recommended by the advisor. The candidate in Speech and Hearing Sciences will be required to demonstrate adequacy in the field of statistics. Completion of the M.A. in Speech and Hearing Sciences qualifies the student for membership in the American Speech and Hearing Association and leads to satisfaction of the requirements for the Certificate of Clinical Competence. The UCSB M.A. program is accredited by the Education and Training Board of A.S.H.A.

Doctor of Philosophy — Speech and Hearing Sciences

A multi-disciplinary non-clinical program leading to the Ph.D. degree in Speech and Hearing Sciences is offered jointly with the University of California, San Francisco. A year's residence on each campus is required, with residency after admission to candidacy to be completed on the campus of the student's choice.

Requirements

Satisfactory completion of written and oral qualifying examinations.

The student must demonstrate proficiency in either a foreign language or a cognate field judged appropriate by the advisory committee.

Oral defense of a doctoral dissertation.

Career opportunities

Most of the career opportunities for the Speech & Hearing Sciences majors continue to be in the public schools where graduates find employment as speech and hearing specialists or educational audiologists; some find their careers in clinics or hospitals. Some students are interested in teaching in classrooms for the aphasic or the autistic. An occasional student finds a career in a nonclinical setting such as a government or industrial research laboratory.

A major in Communication Studies serves practical as well as intellectual ends. For instance, our graduates have been welcome in law schools, theological seminaries, and graduate schools in a variety of fields. Even more have gone directly into teaching, personnel work, public relations, marketing, administration, management traineeships, mass media, government and community service, communication consulting, buying for stores, and other careers in which expertness in communication is important.

Teaching credentials

Students who complete a major in Communication Studies may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall. Consult also with designated advisers in the Department of Speech.

Successful completion of an advanced degree in Speech qualifies for application for a Community College Instructors Credential. Students interested in the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

California Credential in Remedial Speech and Hearing

As this catalog goes to press, requirements for the Speech, Hearing and Language credential remain unclear. Students currently enrolled in the restricted credential sequence at UCSB may complete that sequence and will be advised appropriately by Department faculty. New legislation and guidelines for implementation of a new credential are forthcoming. New students are encouraged to write to the Department Coordinator of Speech and Hearing for clarification with respect to the status of the credential program.

Correspondence information

Department of Speech, Speech and Drama Bldg., University of California, Santa Barbara, California 93106 Phone: (805) 961-2702.

Speech

Lower Division courses

6FS • Freshman Seminar Introduction to Broadcasting Perplexities (3) Quimby

The establishment of a broadcasting service raised many questions which have never been satisfactorily answered. This course will examine some of these questions for the purpose of clarifying the issues, learning how they arose, and considering suggested remedies.

10 • Group Communication (4) Philipsen

Communication processes in small group discussions and conferences. Participation in, and analysis of, classroom discussion groups. Verbal and nonverbal interaction processes are studied through in-class analysis of discussions and conferences.

11 • Fundamentals of Speech (4) Mulac
Introductory course, emphasizing current theories of communication, audience analysis, and persuasion. Preparation and presentation of speeches on topics of current concern. Conferences and videotape replay provides personalized assistance in the Tutorial Laboratory.

35 • Critical Analysis of Speeches (4) Quimby
Introduction to the process of rhetorical criticism and the analysis of speech texts.

40 • Radio and Television Broadcasting (4) Quimby
History of the medium, governmental and social controls. This course will not help the student to qualify for an FCC license.

41 • Broadcasting as Communication (4) Mulac

47 • Argumentation and Debate (4) Mills and Staff
Analysis of controversies, research and evidence, logical and ethical responsibility, attack and defense, organization, presentation, and evaluation of oral and written arguments.

50 • Introduction to Disorders of Speech and Hearing (4) Staff
Description of speech and language behaviors of children and adults with a variety of communication disorders including articulation, stuttering, voice, aphasia, cleft palate and hearing impairment. Includes a consideration of factors which may precipitate and/or maintain such communication disorders.

60 • Child Development (4) Koegel
Prerequisite: Psychology/1. A focus on the study of issues relating to human development from birth through adulthood. Emphasis will be placed on the development of: language, social behavior, intelligence, and abnormal behavior patterns.

Upper Division courses

112 • Community Dialog (4) Staff

117 • Language and Human Behavior (4) Schoell
Discussion of theories which explain meaning in language by the way in which human beings behave toward words.

118 • The Limits of Language (4) Staff

120 • Phonemics in Speech and Hearing (4) Gilchrist
Identification of the phonemes of American English and their symbolic representation. Acoustical and physiological parameters of speech sound formation. Brief historical review of English language and phonetic systems. Modifying symbols.

121 • Hearing and Speech Acousitcs (4) Gerber
Prerequisite: Physics/11. Electroacoustic and psychoacoustic bases of human communication processes.

122 • Speech Science: Physiology (4) Gilchrist
Prerequisites: Zoology/25 or equivalent. Anatomical and physiological bases for an understanding of speech communication.

123 • Anatomy and Physiology of hearing (4) Gerber
Prerequisites: Zoology/25 or equivalent. Anatomy and physiology of the human auditory system.

124 • Aural Pathology and Diagnosis (4)* Gerber
Prerequisite: Speech/123. Causes and types of hearing impairment; otological considerations; medical and surgical implications.

125 • Audiometry I (4)* Garstecki
Prerequisite: Physics/11. Introduction to basic clinical audiometry; problems of the hard-of-hearing; training and supervised practice in identification audiometry and interpretation of audiograms; administration of school audiometry.

*124 and 125 should be taken concurrently.

126 • Audiometry II (4) Garstecki
Prerequisite: Speech/125. Introduction to basic differential diagnostic audiometry; problems of hearing aid evaluation; training and supervised practice in diagnostic audiometry and interpretation of audiograms.

127 • The Hearing Impaired (4) Garstecki
Prerequisites: Speech/125, 151, and 153. Study of the effects of deafness on communication; auditory, visual and total communication procedures for the hearing impaired.

129 • Issues in Rhetorical Theory (4) Quimby
Critical survey of literature dealing with enduring issues such as the nature of rhetoric, its ethics, and its place in education and politics. Plato to Richards.

131 • Advanced Public Speaking (4) Mulac
Theory and practice of oral communication as it applies to a wide range of situations. Theoretical constructs based upon current quantitative research provide criteria for evaluating communicational events. Students prepare and deliver a variety of speeches to audiences face-to-face as well as via closed circuit radio and television.

132A • Great Issue In American Public Address (4) Schoell
A survey of significant issues and a study of the leading speakers who dealt with them.

132B • Great Issues In American Public Address (4) Schoell
Prerequisite: 132A or consent of instructor. A rhetorical study in depth of the speaking of a period, or the speaking on a single issue, or the speaking of an individual.

133A • British Public Address (4) Staff

133B • British Public Address (4) Staff

134 • Contemporary Public Address (4) Mills
An analytical study of the persuasive efforts of the leaders of major social, political, and religious reform movements since World War II.

136 • Persuasion (4) Mulac
Prerequisite: Speech/11. Analysis and synthesis of current persuasion theory as it has evolved through research in the behavioral sciences. Topics for study include: attention, motivation, set, materials of persuasion, stimulus manipulation and measurement or resultant behavior.

138 • Noverbal Communication in Human Interaction (4) Philipsen

140 • Introduction to Television (4) Quimby
Prerequisite: Speech/40. Development of American educational and commercial television, emerging policies for satellite and cable television. Laboratory will include analytical viewing of non-dramatic programs and consideration of the problems unique to the director, crew, and performer.

141 • Chamber Theater (1-4)

142 • Oral Interpretation of Literature (4) Staff
Principles and procedures for the analysis of literature as preparation for oral communication. Practice in oral presentations of several types of literature.

149A • Discussion Processes (4) Philipsen
Prerequisites: Speech/10 or permission of the instructor. Leadership and communication in the task-oriented discussion group. Intensive practice in participant observation and analysis of communication processes in small groups.

149B • Discussion and Conference Methods (4) Philipsen
Prerequisite: Speech/149A. The small conference as an innovation in communication, with particular attention to the use of the discussion group in conference activities. Supervised experiences in planning, executing and evaluating group and conference experiences.

150 • Phonetics (4) Schoell
Phonetic identification of the sounds of American English. Acoustics and physiology of speech production. General American pronunciation standards and regional speech variations.

151 • Natural Acquisition of the Phonemic System (4) Prutting
Prerequisites: Speech/50, 60, and 120. Natural acquisition of the phonemic system in children. The course consists of theoretical, historical, contemporary and applied aspects of language acquisition.

152 • Measurement and Treatment of Language: Phonemic (4) Costello, Prutting
Prerequisite: Speech/151, 166. Contemporary procedures for the measurement and description of articulatory behaviors in children and adults; design and implementation of various approaches for remediation of these phonemic differences.

153 • Natural Acquisition of Syntactic-Semantic System (4) Prutting
Prerequisites: Speech/50, 60, and 120. Natural acquisition of the syntactic-semantic system in children. The course consists of theoretical, historical, contemporary and applied aspects of language acquisition.

154 • Measurement and Treatment of Language: Syntax and Semantics (4) Costello, Prutting
Prerequisite: Speech/153, 166. Contemporary procedures for the measurement and description of syntactic and semantic behaviors in children and adults; design and implementation of various approaches for remediation of these language differences.

157 • Intercollegiate Debate (2-4) Staff
Participation in intercollegiate debate. Maximum of 4 units in any quarter. May be repeated for a maximum of 8 units.

158 • Interpersonal Communication Theories (4) Philipsen

159 • Legal Argumentation (4) Mills
Open to juniors, seniors, and graduate students. Forensic rhetoric is concerned with issues, evidence, kinds of arguments, and language in lawyers' pleadings and courts' opinions.

166 • Principles of Behavior Modification (4) Costello
Prerequisite: Psychology/1 or 101. Basic principles of behavior modification and their use in classroom, family, and clinical environments with special reference to speech pathology.

168 • Evaluation and Remediation Procedures: Survey of

Professional Services (4) Jackson
Prerequisites: Speech/152, 154, and 166. Consent of instructor. Remediation of communication disorders in children and adults using videotape and discussion. Off campus screening of school age children. Lectures from professionals in Speech and Hearing and related fields.

171 • Clinical Practice: Speech and Hearing (1-5) Jackson
Prerequisites: Speech/152, 154, and 166. Consent of instructor. Observation and supervised application of remedial procedures in Speech and Hearing Center, cerebral palsy center, school for retardates, and hospital rehabilitation facility. May be repeated for maximum of 6 units. Class size limited to assure appropriate supervision.

180 • Contemporary Rhetoric (4) Mills
Discussion of theoretical formulations of Richards, Weaver, Burke, McLuhan, and others, and the theory-building dimension of research in verbal communication.

181 • Quantitative Methods in Speech Research (4) Mulac
The methodology for quantitative research in Speech. Computation of standard statistical procedures.

185 • Cultural Patterns of Communication (4) Philipsen
Social and cultural influences in face-to-face communication processes. A sociolinguistic analysis of problems of diversity of speech use in contemporary America.

190 • Neuropathologies of Speech (4) Jackson, Gilchrist
Prerequisites: Zoology/25 and Speech/120. Will be offered in even-numbered years. Examination of the phonological and prosodic effects of neuropathologies such as cerebral palsy and aphasia. Remedial procedures.

193 • Phonation and Resonance (4) Jackson, Gilchrist
Prerequisite: Zoology/25 and 25L; Speech/120. Will be offered in odd-numbered years. Consideration of structural and functional causes of vocal deviations such as those associated with cleft palate and laryngeal disorders. Remedial procedures.

194 • Group Studies for Advanced Students (1-4) Staff
Selected topics in accordance with instructors' areas of specialization.

195 • Infantile Autism (4) Koegel
Prerequisite: A course in behavior modification and permission of instructor. A focus on the study of variables pertaining to diagnosis and treatment of autistic children, and understanding of variables involved in abnormal child development (deviant language acquisition, abnormal social relations, etc.). Students will identify symptoms from observations of autistic children and design treatment programs.

196 • Infantile Autism Laboratory (2-4) Koegel
Prerequisite: Speech/195. Students design and carry out a supervised experimental analysis or treatment program for an autistic child. Course may be repeated.

197 • Instructional Laboratory (1-4) Staff
Prerequisites: Senior standing; B average in Speech and Hearing major; consent of instructor. Innovative teaching methods for advanced undergraduate students in preparation for graduate education.

***199 • Independent Studies in Speech** (1-5) Staff
Prerequisite: open to seniors of proven scholastic ability by consent of chairman and instructor. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total. Written proposal required.

Graduate courses

200 • Introduction to Graduate Study in Speech (3) Staff

201 • Introduction to Graduate Study in Speech and Hearing (3) Gerber, Staff
Open, with the permission of the departmental chairman, to qualified students who have completed the bachelor of arts degree. Designed to acquaint the student with the procedures and disciplines essential for pursuing graduate work in speech and hearing science.

202 • Seminar in College Speech Pedagogy (3) Mulac

204 • Theory and Practice of Argumentation (4) Staff

205 • The Rhetoric of Dissent (4) Staff

206 • Quantitiative Studies in Speech (4) Mulac
Prerequisite: Speech/181 or consent of Instructor. Current theories of speech communication which have evolved through quantitative research.

211 • Experimental Design in Speech Research (4) Staff

220 • Experimental Phonetics (4) Hanley
Prerequisites: Speech/120, 122, or consent of instructor. Critical examination of theoretical and experimental foundations for current procedures in evaluation and description of vocal communication.

221 • Experimental Audiology (4) Gerber
Prerequisite: Consent of instructor. Research methods in psychological and physiological acoustics; review of significant studies; use of instrumentation.

223 • Electrophysiological Audiology (4) Gerber
Prerequisite: Consent of instructor. Physiological acoustics; use of instruments and methods to assess physiological responses to sound: encephalography, cardiography, cochleography, etc. Offered in even-numbered years.

224 • Pediatric Audiology (4) Gerber
Prerequisite: Consent of instructor. Developmental anatomy, physiology, and pathology of hearing. Screening and diagnostic audiometry for neonates, infants and children up to age 36 months. Genetics of hearing and deafness. Offered in odd-numbered years.

225 • Educational Audiology (4) Garstecki
Prerequisite: Consent of instructor. Discussion of theoretical and practical considerations in the evaluation and remediation of communications disorders in school aged children demonstrating aural pathology.

226 • Clinical Audiology (4) Garstecki
Prerequisite: Consent of instructor. Study of advanced audiological diagnostic procedures and related research: laboratory experience using diagnostic and research instrumentation.

227 • Rehabilitative Audiology (4) Garstecki
Prerequisite: Consent of instructor. Contemporary theoretical, methodological and experimental approaches to the improvement of communication skills in the hearing impaired.

232 • Public Address in Antiquity (4) Staff

245 • Experimental Studies in Speech (4) Prutting
Prerequisite: Consent of instructor. The critical consideration of experiments in speech pathology with an introduction to experimental procedures.

251 • Seminar in Language (4) Prutting
Prerequisite: Consent of instructor. Consideration of psycholinguistic theory and research. Application to the field of Speech Pathology will be emphasized. The child with delayed language and the culturally different child will be discussed. Offered in even-numbered years.

252 • Evaluative Procedures: Language (4) Prutting
Prerequisite: Consent of instructor. Principles and procedures for the analysis of language with regard to the clinical population. Supervised clinical practicum using standardized methods as well as linguistic descriptions will be provided. Offered in odd-numbered years.

261 • Classical Rhetoric (4) Staff

262 • Medieval and Renaissance Rhetoric (4) Staff

263 • Rhetorical Criticism (4) (See 595K) Mills

266 • Research in Behavior Modification (4) Costello, Koegel
Prerequisites: Speech/166 or other courses in operant conditioning. Graduate standing or consent of instructor. The advanced use of behavior modification procedures in clinical speech pathology and study of research design methodology. Case work included.

267 • Disfluent Speech and Disorders of Speaking Rate (4) Costello
Identification and development of stuttering behavior in children and adults; procedures for description and measurement of such behaviors; special attention to the design of treatment programs incorporating various remediation approaches including behavior modification, counseling, group treatment. Offered in odd-numbered years.

268 • Principles of Counseling (4) Koegel
Prerequisites: Graduate standing and consent of instructor. Focus on various approaches to the identification and treatment of children with emotional and/or communication handicaps. Variables involved in designing parent training programs will also be discussed.

285 • Seminar in History and Criticism of Rhetoric and Public Address (4) Staff

286 • Seminar in Quantitative Studies in Speech (4) Staff

292 • Organic Disorders of Speech: Structural (4) Hanley
Prerequisites: Speech/122 and consent of instructor. Evaluation and management of speech disorders associated with cleft palate and other congenital or traumatic structural defects.

293 • Disorders of Phonation (4) Hanley
Prerequisites: Speech/122 and consent of instructor. Detailed analysis of the human phonatory mechanism, normal function and dysfunction. Examination of theoretical models. Evaluation and management of dysphonias.

294 • Seminar in Acquired Aphasia (4)
Prerequisite: Graduate standing and consent of instructor. Discussion of the nature and etiology of acquired aphasia, methods of language measurement and treatment, and critique of current literature regarding the language and other problems of aphasic persons. Observations of aphasic patients included.

295 • Seminar in Learning Disabilities (4) Koegel
Prerequisite: Consent of instructor. Discussion of critical issues in the field of learning disabilities with emphasis on the diagnosis and treatment of infantile autism and school problems.

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*See, L-2 for 198/199 independent studies unit limitations.

501 • Research Seminar Speech and Hearing (1) Staff
Prerequisite: Graduate standing. Discussion and criticism of current research activity.

594AA—594ZZ • Special Topics (1-4) Staff
Prerequisite: Consent of instructor. Selected topics in accordance with instructors' specializations. Subject matter will be selected from same group as listed for 598 series. (May be repeated with a different topic for a maximum of nine units.)

595AA—595ZZ • Group Studies (3) Staff
Prerequisite: Consent of instructor. Critical view of research organized on a topic basis in accordance with instructor's specializations. Subject matter will be selected from same group as listed for 598 series. (May be repeated with a different topic for a maximum of nine units.)

596AA—596ZZ • Directed Reading and Research (2-4) Staff
Prerequisite: Consent of instructor. Individual tutorial. A written proposal must be approved by the department chairman and filed with the Graduate Division. Subject matter will be selected from same group as listed for 598 series. (May be repeated for a maximum of 10 units.)

598AA—598ZZ • Master's Thesis and Research Preparation (1-6) Staff
The thesis work is done under the direction of the chairman of a student's thesis committee.

Related courses in education

Education **SP390 • Curriculum instructional procedures and materials used in teaching speech** (3) Schoell
Prerequisite: consent of instructor.

Education **SP390C • Curriculum instructional procedures and materials used in teaching speech and hearing** (3) Jackson
Prerequisites: Speech/127, 166 or 167 and 171. Remedial methods for the speech and hearing handicapped in the public schools. Laboratory required. Required for state credential candidates.

Education **SP 392A • Student Teaching: Speech** (3-6) Schoell

Education **SP 392B • Student Teaching: Speech and hearing** (3-6) Jackson
Prerequisite: Speech/171, Education/SP390C, completion of one graduate year, and decision of faculty committee. Students must complete a total of 90 clock hours of actual teaching exclusive of observation.

Subject A

Faculty

Jean E. Heywood, M.A., Toronto; Instruction Supervisor.
William S. Myers, M.A., Dayton; Associate, English as a second language.
Gerald A. Bradley, M.A., UCSB; Lecturer.
Marguerite P. Chittick, M.A., Michigan State; Associate.
M. Rashid Karadaghi, Ph.D., UCSB; Associate.
Eleanor A. Thompson, M.A., Illinois; Lecturer.
Laurel M. Walker, M.A., UCSB; Associate.

Regulations

For regulations governing the Subject A requirement, see F-2. Fee for Subject A course: $45.

Subject A • English Composition (no credit) Staff
Four hours weekly for one quarter. This course offers training in the study of English composition through a descriptive study of the English language with emphasis on usage, rhetoric and style. Weekly compositions and other assignments enable students to develop writing skills.

Satisfaction of the Subject A requirement is prerequisite to enrollment in English 1A.

English as a Second Language • 1A (5) Myers
Prerequisite: Qualifying score on English Language Examination. A general course in English for foreign students, covering reading, writing, speaking and listening at an intermediate level. Regular attendance at the language laboratory is required.

English as a Second Language • 1B (4) Myers
Prerequisite: Qualifying score on English Language Placement Examination. Speaking and listening in English for foreign students. Designed to help students develop natural speech patterns in English through systematic drills in pronunciation patterns, extemporaneous speaking, group discussions, general question and response practice in everyday conversation and use of prepared language laboratory programs.

English as a Second Language • 1C (4) Myers
Prerequisite: Qualifying score on English Language Placement Examination. Advanced reading and writing of English for foreign students. Designed to make students more fully aware of the variety of styles and levels of usage in written English, to improve their vocabulary skills and to develop their ability to write good prose. Through reading and writing analytical prose, students are exposed to the kind of English essential to university-level writing.

Tutorial

Committee in Charge

Walter Capps, Ph.D., Professor of Religious Studies.
Patrizio Rossi, Ph.D., Associate Professor of Italian (Chairman).
Lawrence Willson, Ph.D., Professor of English.

Concerns of the program

The purpose of the Tutorial Program is to offer a broad education in the liberal arts through an interdepartmental curriculum which allows the design of individual courses of study. The Tutorial Program emphasizes rigorous training in the arts of critical reading, discussion and writing. The student in every Tutorial course (except Tutorial/1, where the requirement may be less) is required to present a minimum of 1,000 words of writing each week.

The province of the Tutorial Program is the study of interdisciplinary topics in the liberal arts. In the Lower Division, Tutorial/1, an introduction to tutorial methods, is offered in several seminars which deal with various subjects. This course, not required, is open to freshmen. The Colloquia are electives for all Upper Division students. Tutorial/100 courses are open to all Upper Division students (although not in the departments of their majors) on the recommendation of the chairmen of the departments in which they are majoring.

Bachelor of Arts

Forty units of Tutorial/100 are required for the Tutorial major.

Correspondence information

Tutorial Program, South Hall, Rm. 4505, University of California, Santa Barbara, California 93106 Phone: (805) 961-2347

Tutorial

Lower Division course

1 • Introduction to Tutorial (1-3) Staff
Prerequisite: Approval of instructor. Readings and essay writing designed to acquaint new or prospective Tutorial majors with the nature and methods of the Tutorial Program. Freshmen.

Upper Division courses

Colloquium (4) Staff
Prerequisite: Approval of instructor. Formal discussion group with readings and essay writing. Conducted by two instructors from different departments of knowledge.

Tutorial Upper Division courses

100 • Tutorial (4) Staff
Prerequisite: Approval of instructor. May be repeated for credit up to 40 units. Tutors to be selected from the faculty according to the interests and requirements of the students.

***199 • Independent studies** (4) Staff
Prerequisites: Instructor and departmental approval. Independent studies to enhance the student's background for his Tutorial theme.

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*See L-2 for 198/199 independent studies unit limitations.

Appendix

Officers of the University of California

Regents Ex Officio

Edmund G. Brown, Jr.
Governor of California and President of The Regents

Mervyn M. Dymally
Lieutenant Governor of California

Leo T. McCarthy
Speaker of the Assembly

Wilson Riles
State Superintendent of Public Instruction

Edward A. Morris
President of the Alumni Association

James Collins
Vice President of the Alumni Association

David S. Saxon
President of the University

Appointed Regents †

Edward W. Carter (1982)

Mrs. Randolph A. Hearst (1990)

Norton Simon (1976)

William E. Forbes (1978)

William M. Roth (1980)

Mrs. Edward H. Heller (1976)

Frederick G. Dutton (1978)

William K. Coblentz (1980)

DeWitt A. Higgs (1982)

Glenn Campbell (1984)

William French Smith (1986)

Robert O. Reynolds (1986)

Dean A. Watkins (1984)

John H. Lawrence, M.D. (1988)

William A. Wilson (1988)

Joseph A. Moore, Jr. (1990)

Student Regent – *Carol Lynn Mock* (1976)

Principal Officers of the Regents

Donald L. Reidhaar
General Counsel

Owsley B. Hammond
Treasurer

Miss Marjorie J. Woolman
Secretary

Office of the President

Charles J. Hitch
President of the University (until June 30, 1975)

David S. Saxon
President of the University (after July 1, 1975)

Donald C. Swain
Academic Vice President

James B. McKendrick, Jr.
Vice President—Agricultural Sciences

John A. Perkins
Vice President—Business and Finance

Frank L. Kidner
Vice President—Educational Relations

Durward Long
Vice President—Extended Academic Programs

Jay D. Michael
Vice President—Governmental Relations

Robert L. Johnson
Vice President—University and Student Relations

Angus E. Taylor
University Provost

Dorothy E. Everett
Assistant President—Coordination and Review

Beverly Ruth Liss
Assistant President—Campus and Internal Relations

Chancellors

Albert H. Bowker, Chancellor at Berkeley
James H. Meyer, Chancellor at Davis
Daniel G. Aldrich, Jr., Chancellor at Irvine
Charles E. Young, Chancellor at Los Angeles
Ivan H. Hinderaker, Chancellor at Riverside
William D. McElroy, Chancellor at San Diego
Francis A. Sooy, Chancellor at San Francisco
Vernon I. Cheadle, Chancellor at Santa Barbara
Mark N. Christensen, Chancellor at Santa Cruz

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† The names are arranged in order of original appointment to the Board of Regents. The term of appointed Regents is twelve years, and terms expire on March 1 of the year indicated.

Officers of the Santa Barbara campus

General Administrative Officers

Chancellor: *Vernon I. Cheadle*

Provost, Emeritus, *J. Harold Williams*

Vice Chancellors
Alec P. Alexander – Academic Affairs
Stephen S. Goodspeed – Administrative Affairs
_____________– Student Affairs and Isla Vista Affairs
_______________ – Business Affairs

Assistant to the Chancellor — University Relations: *Dodge Crockett, Jr.*

Executive Assistant to the Chancellor: *Madeline K. Joyce*

Assistants to the Vice Chancellors
William H. Steinmetz – Administrative Affairs
Donald P. Winter – Student Affairs and Isla Vista Affairs

Director, Planning, Analysis and Budget: *Richard W. Jensen*

Budget Officer: *Roger L. Horton*

Academic Officers

College of Letters and Science
Bruce F. Rickborn, Dean
Gunther H. Gottschalk, Associate Dean
David A. Sprecher, Associate Dean

College of Engineering
John G. Skalnik, Dean
William Kuby, Associate Dean

College of Creative Studies
Marvin Mudrick, Provost
Max L. Weiss, Associate Provost

Extended University
Brian M. Fagan, Dean

Graduate School of Education
Norman J. Boyan, Dean

Graduate Division
Robert O. Collins, Dean

Instructional Development
Brian M. Fagan, Dean
David L. Outcalt, Academic Assistant

Research Development
Henry W. Offen, Dean
Phyllis L. Reese, Contracts & Grants Officer

University Librarian
Donald C. Davidson

Education Abroad Program
William H. Allaway, Director

Learning Resources
Joseph J. Sayovitz, Director

University Extension
John C. Maxwell, Acting Director

Summer Session
Phillip A. Ostrand, Director

Administrative Roster

Accounting
____

Affirmative Action
Raymond Huerta, Coordinator

Alumni Association
Dale T. Lauderdale, Director

Architects and Engineers
Robson C. Chambers, Campus Architect

Arts and Lectures
Margaret W. Armstrong, Manager

Athletics and Leisure Services
Albert E. Negratti, Director

Campus Regulations
Eugene Shands, Coordinator

Campus Services
Charles R. Leopkey, Manager

Cashier
Shirley W. Greene, Cashier

Central Duplicating Services
Jane Mostue, Manager

Central Receiving/Stores
Joseph A. Dandona, Manager

Collections Office
Leilani Hubbard, Supervisor

Communications Center
Carl A. Dewey, Manager

Computer Center
Charles R. Loepkey, Director

Counseling Center
Ira P. Weinstein, Director

Educational Opportunity Program
George E. Smith, Acting Director

Environmental Health & Safety
William H. Steinmetz, Officer

Equipment Management
James Penoff, Equipment Manager

Financial Aids
Lucy W. Harlan, Dean
Edward Apodaca, Coordinator

Financial Services
Floyd G. Nixon, Manager

Fire Department
F. Tim Underwood, Marshal

Foreign Students
Kollamala M. Mathew, Associate Dean

Gifts and Endowments
Robert A. Davies, Director of Development

Housing and Residential Services
Everett R. Kirkelie, Director

Housing Services
Joan F. Mortell, Supervisor

Information Center
Joan Reetz, Assistant Dean

Information Systems
Robert J. Kroes, Manager

Mail and Messenger
Robert B. Ebersole, Supervisor

Management and Business Services
Robert J. Kroes, Manager

Ombudsman
Geoffrey Wallace

Parking Services
S. Dexter Wood, Supervisor

Personnel
Robert J. Cameron, Manager

Physical Plant Department
John A. Gabe, Administrator

Placement Center
D. L. Chalberg, Manager

Police Department
Derry E. Bowles, Chief

Policies and Procedures
Susan G. Carberry, Coordinator

Publications
Harold E. Berg, Manager

Public Ceremonies
Barbara J. Kuhn, Coordinator

Public Information
E. George Obern, Manager

Purchasing
E. Don Harmer, Materiel Manager

Registrar/Admissions
Charles W. McKinney, Registrar and Admissions Officer

Relations with Schools and Colleges
Ralph K. Nair, Director

Student Activities
Leslie M. Zomalt, Associate Dean
Yvonne Washington, Assistant Dean

Student Affairs
Lyle G. Reynolds, Dean
Robert N. Evans, Associate Dean

Student Health Service
________________, Director

Student Residents
Margaret M. Getman, Associate Dean

Student Special Services
____

Transportation Services
Carson C. Kittle, Manager

University Center
Robert L. Lorden, Executive Director

Upward Bound Program
Arthur Oosterveen, Director

Women's Center
Leslie M. Zomalt, Director

Nonresident Tuition Fee Statement

Students who have not been residents of California for more than one year immediately prior to the residence determination date for each term in which they propose to attend the University are charged, along with other fees, a nonresident tuition fee of $500 for the quarter or $750 for the semester. The residence determination date is the day instruction begins at the last of the University of California campuses to open for the quarter, and for schools on the semester system, the day instruction begins for the semester.

General

California residence is established by an adult who has relinquished his or her prior residence and is physically present within the state with the intent to make California the permanent home. California residence must be established more than one year prior to the term for which resident classification is requested. Indicia of California residence include, but are not limited to: registering and voting in California elections; designating California as the permanent address on all school and employment records, including military records if one is in the military service; obtaining a California I.D. card or drivers license; obtaining California vehicle registration; paying California income taxes as a resident; establishing an abode where one's permanent belongings are kept; licensing for professional practice in California, etc. Conduct inconsistent with the claim of California residence includes, but is not necessarily limited to: maintaining voter registration and voting in person or by absentee in another state; obtaining a divorce in another state; attending an out-of-state institution as a resident; obtaining a loan requiring residence in another state; maintaining out-of-state drivers license and vehicle registration, etc.

A student who is within California for educational purposes only does not gain the status of resident regardless of the length of his or her stay in California.

The residence of the parent with whom an unmarried minor (under age 18) child maintains his or her place of abode is the residence of the unmarried minor child. When the minor lives with neither parent his or her residence is that of the parent with whom he or she maintained his or her last place of abode. The minor may establish his or her residence when both parents are deceased and a legal guardian has not been appointed. The residence of an unmarried minor who has a parent living cannot be changed by his or her own act, by the appointment of a legal guardian, or by relinquishment of a parent's right of control.

A man or a woman establishes his or her residence. A woman's residence shall not be derivative from that of her husband, or vice versa.

Exceptions

1. A student who remains in this state after his or her parent, who was theretofore domiciled in California for at least one year prior to leaving and has, during the student's minority and within one year immediately prior to the residence determination date, established residence elsewhere, shall be entitled to resident classification until the student has attained the age of majority and has resided in the state the minimum time necessary to become a resident so long as, once enrolled, he or she maintains continuous attendance at an institution.
2. Nonresident students who are minors or 18 years of age and can evidence that they have been totally self-supporting through employment and actually present within California for the entire year immediately prior to the residence determination date and have evidenced the intent to make California their permanent home may be eligible for resident status.
3. A student shall be entitled to resident classification if immediately prior to the residence determination date he or she has lived with and been under the continuous direct care and control of any adult or adults other than a parent for not less than two years, provided that the adult or adults having such control have been California residents during the year immediately prior to the residence determination date. This exception continues until the student has resided in the state the minimum time necessary to become a resident student, so long as continuous attendance is maintained at an institution.
4. Exemption from payment of the nonresident tuition fee is available to the natural or adopted child, stepchild or spouse who is a dependent of a member of the United States military stationed in California on active duty. Such resident classification may be maintained until the student has resided in California the minimum time necessary to become a resident. If a student is enrolled in an institution and the member of the military is transferred on military orders to a place outside the United States immediately after having been on active duty in California, the student is entitled to retain resident classification under conditions set forth above.
5. A student who is a member of the United States military stationed in California on active duty, except a member of the military assigned for educational purposes to a state-supported institution of higher education, shall be entitled to resident classification until he or she has resided in the state the minimum time necessary to become a resident.

6. A student who is an adult alien is entitled to resident classification if the student has been lawfully admitted to the United States for permanent residence in accordance with all applicable provisions of the laws of the United States and has thereafter established and maintained residence in California for more than one year immediately prior to the residence determination date.

7. A student who is a minor alien shall be entitled to resident classification if the student and the parent from whom residence is derived have been lawfully admitted to the United States for permanent residence, provided that the parent has had residence in California for more than one year after acquiring a permanent resident visa prior to the residence determination date for the term.

8. Children of deceased public law enforcement or fire suppression employees, who were California residents and who were killed in the course of law enforcement or fire suppression duties, may be entitled to resident status.

New and returning students are required to complete a Statement of Legal Residence. The student's status is determined by the Attorney in Residence Matters' Deputy who is located in the Registrar's Office.

The student is cautioned that this summation is not a complete explanation of the law regarding residence. The student should also note that changes may have been made in the rate of nonresident tuition and the residence requirements between the time this catalog statement is published and the relevant residence determination date. Regulations have been adopted by The Regents, a copy of which is available for inspection in the Registrar's Office of the campus.

Those classified incorrectly as residents are subject to reclassification as nonresidents and payment of all nonresident fees. If incorrect classification results from false or concealed facts, the student is subject to University discipline and is required to pay all fees he or she would have been charged as a nonresident. Resident students who become nonresidents must immediately notify the Attorney in Residence Matters' Deputy.

Inquiries from prospective students regarding residence requirements for tuition purposes should be directed to the Attorney in Residence Matters, 590 University Hall, 2200 University Avenue, Berkeley, California 94720. No other University personnel are authorized to supply information relative to residence requirements for tuition purposes. Any student, following a final decision on residence classification by the Residence Deputy, may make written appeal to the Attorney in Residence Matters at the above address within 120 days after notification of the final decision by the Residence Deputy.

University governance

The organization and government of the University of California is entrusted, under the State Constitution, to a corporate body titled The Regents of the University of California. The Board of Regents is composed of twenty-three members, sixteen appointed by the Governor of the State for twelve-year terms and seven who are members *ex officio*. These seven are: the Governor, the Lieutenant Governor, the Speaker of the Assembly, the State Superintendent of Public Instruction, the President and Vice President of the Alumni Association, and the President of the University. The Regents also appoint a student and a faculty representative to the Board of Regents.

The Regents have "full powers of organization and government, subject only to such Legislative control as may be necessary to insure compliance with the terms of the endowments of the University and the security of its funds." The Regents may be addressed through the Secretary, Miss Marjorie J. Woolman, University Hall, 2200 University Avenue, Berkeley, California, 94720.

The President of the University is the executive head of the University in all its departments and on all its campuses. He is appointed by The Regents and is directly responsible to them. The President and his staff, with headquarters in University Hall at Berkeley, direct the development of major University-wide policy.

The Chancellor is the chief administrative officer on each campus and administers the organization and operation of the campus.

To participate in the administration of campus matters, The Regents have established an Academic Senate, consisting of the faculty and certain of the administrative officers. The Senate, subject to the approval of The Regents, determines conditions for admission of students, and for granting certificates and degrees. It authorizes and supervises all courses of instruction in the academic and professional schools and colleges and exercises general supervision of the discipline of students.

The student body government, known as the Associated Students, is described in D7.

Glossary

Academic year Starts at the beginning of the Fall Quarter, ends at the close of the Spring Quarter; does not usually include the Summer Session.

Advanced degree Any degree beyond the bachelor's degree.

Alpha number The identification number assigned to each student at UCSB.

College A subdivision of the campus instructional structure (i.e., College of Creative Studies, College of Engineering, College of Letters and Science). The Colleges of Engineering and Letters and Science are further divided into departments which offer specialized curricula.

Credential A license for public school service in California relating to the programs offered by the Graduate School of Education in teaching, counseling, school administration, and the specialist areas of speech and hearing, bilingual/cross-cultural education, early childhood education, and reading.

Deficit program A study list consisting of fewer than the minimum number of units required for full time registration in a single quarter; such minimums differ for undergraduates and graduates.

Excess program A study list consisting of more than the maximum number of units permitted for a single quarter; maximums vary from college to college, depending upon the student's academic status, and vary for graduates and undergraduates.

Grade option Certain undergraduate courses are open to qualified students on a passed/not passed basis rather than for a letter grade. Certain graduate courses are offered on a satisfactory/unsatisfactory basis.

Graduate A student who is enrolled in the Graduate Division; also refers to courses numbered above 199 at UCSB.

Independent studies Special courses involving independent studies. Such courses for undergraduates are designated by the numbers 198 and 199, while those for graduate students are numbered 596 to 599. These courses are restricted to qualified students for a limited number of units.

Instructor A member of the University teaching staff whose instruction is not subject to direct supervision. Teaching Fellows and Teaching Assistants are not considered instructors.

Lower Division Freshman and sophomore standing at UCSB (fewer than 84 units completed); also refers to UCSB courses numbered from 1 through 99.

Major The area of concentration in which the degree is conferred.

Ombudsman Person appointed to receive and investigate problems which have not been successfully resolved by other campus agencies.

Petition A request, usually written on a standard form, to adjust a study list or curriculum to fit an individual situation. Also, a request for an exception to a policy or regulation.

Prerequisite A necessary condition for enrollment in a course or a major. Prerequisites for courses usually consist of a previous course in a related subject and/or the instructor's permission. Prerequisites for each course are indicated in the course description. Prerequisites for admission into a major are described with the major requirements in the departmental section of this catalog.

Quarter A subdivision of the academic year at UCSB, consisting of three ten-week quarters (Fall, Winter, and Spring). Summer Session is not a full quarter and at present lasts six weeks.

Regular Session Refers to Fall, Winter and Spring Quarters, but not to Summer Session.

Residence This word is used in a number of senses in this catalog; care must be exercised to determine the meaning of the word each time it is used. Residence can be used: (1) to denote registration in a regular session (i.e., when a student is ''in residence'' during Fall, Winter, or Spring Quarters) and (2) to denote the period of time that a student must be registered at UCSB in order to be eligible for graduation (academic residence); (3) to denote a student's state (e.g., California) of residence to determine if non-resident tuition must be paid (i.e., legal residence); (4) and to indicate the student's place of residence (i.e., living quarters).

Semester A subdivision of the academic year into two sessions, Fall and Spring, each lasting approximately 18 weeks; the normal alternative to the quarter system in other colleges and universities.

Study List The official program of courses for which a student registers each quarter. The Study List is submitted to the Registrar at the time of registration (packet filing).

Summer Session Regular instruction, both undergraduate and graduate, offered for credit between the close of the Spring Quarter and the opening of the Fall Quarter.

Term A regular quarter (Fall, Winter, or Spring).

Undergraduate A college student who is pursuing a bachelor's degree; also refers to UCSB courses numbered 1-199.

Unit Courses are assigned a unit value, based on one unit of credit for every three hours work per week per quarter. A student's progress in the university and candidacy for graduation are determined in part by the number of units completed.

Upper Division Junior and senior standing at UCSB, based upon completion of at least 84 units; also refers to UCSB courses numbered 100-199.

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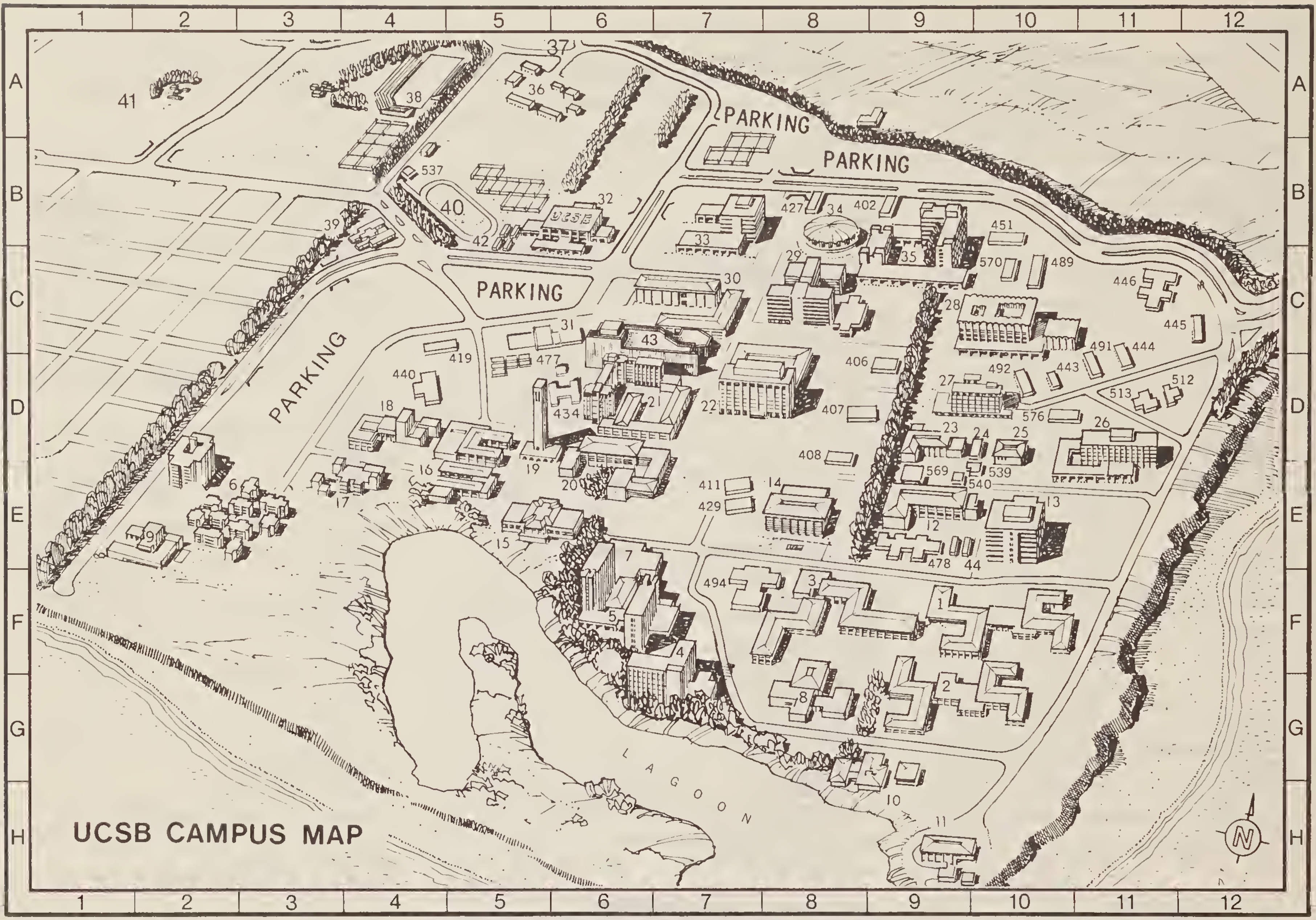

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Women's Center	Bldg. 513

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